THE

REGISTRAR-GENERAL'S

STATISTICAL REVIEW

OF

ENGLAND AND WALES,

FOR THE YEAR

1929.

(New Annual Series, No. 9)

TEXT.

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TEXT.

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LIST OF CORRIGENDA IN THE STATISTICAL REVIEW.

YEARS 1922–1928.

TEXT.

Table relating to England and Wales. Birth-rates and Fertility, 1871—, All Births, 1911 (1910–12) for 24·4 read 24·5 and for 1089 read 1094. This alteration is due to revision of the estimated population.

YEAR 1928.

TEXT.

Table C1. (Page 171.) Footnote, for "see page 172 "read "see footnote on page 8."

YEAR 1929.

TABLES : PART I.—MEDICAL.

Table 5A. (Page 37.) Standardized Death-rate, Acute Bronchitis, 99a, Females 1929, for 182 read 179.

(Page 38.) Violent deaths, excluding suicide and homicide, 175–196, 201–203, Females 1929, for 222 read 226.

TABLES : PART II.—CIVIL.

Table A. (Page 2.)—Population, Great Britain and Ireland, 1929. Males, for 23,607 read 23,411, Females, for 25,077 read 25,273.

Table G. (Page 64.) Marriages. Age Group 45–49, all Widows, for 352 read 2,352.

STATISTICAL REVIEW, 1929.

Note—Of the tables referred to below, those numbered in Arabic will be found in " Tables, Part I—Medical," and those lettered in " Tables, Part II—Civil," while those numbered in Roman numerals appear in the text of this volume.

DEATHS.

The deaths of 532,492 persons were registered in England and Wales during 1929, 269,903 of these being males and 262,589 females.

This number is 16 per cent. above that for 1928, and is, indeed, much the highest since mortality was swollen in 1918 by the great influenza pandemic.

Deaths of civilians, including all deaths of females and 99·82 per cent. of those of males, are referred in tabulation to their administrative area of residence, and therefore figure in all tables relating to portions of the country. It has been found, however, that similar treatment cannot be satisfactorily applied to the deaths of non-civilians, which are therefore excluded from all tables relating to local areas. Table 17, accordingly, so far as it refers to England and Wales as a whole, includes all deaths registered, but when referring to the population as subdivided by class of area includes only deaths of civilians; and the same restriction to civilian mortality only applies to all tables embodying distinction of local area.

Death-Rate.—The 532,492 deaths correspond to a rate of 13·4 per 1,000 of the estimated population. When standardized* to correct for the deviation of the sex and age distribution of the population, as shown in Table LXX, from that of the standard population of 1901, this death-rate is reduced to 11·5.

As the population of this country in 1901 included relatively few infants and old people it forms a standard exceptionally favourable to low mortality. Its use for this purpose accordingly yields comparatively low standardized rates all round. In order

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* The term " standardized death-rate " means the death-rate corrected for differences of sex and age constitution of the population. For a description of the direct method employed for this " standardization " *see* the Annual Report for 1911 (pages xxvii-xxxi). Standardized death-rates for the sexes separately quoted in this Review are based upon the age distribution of persons of undistinguished sex in the general population of England and Wales in 1901. (*See* Annual Report for 1913, page xx.)

to correct any wrong impression which might arise from this fact, and to provide standardized rates for this country comparable with those of countries using the standard recommended by the International Statistical Institute (a composite population made up of those of a large number of European countries in 1900 or 1901), rates calculated upon the latter by the method suggested by the Institute* are shown in Table XVII, as well as those based on the 1901 English standard, which is that always used elsewhere in this Review. It will be seen that use of the less favourable standard increased the rate from 11·5 to 12·8 per thousand.

The rate of 11·5 per 1,000, though 16 per cent. above that for 1928, is seen from Table 1 (Part 1) to be below all but quite recent experience. Apart from those of seven of the eight preceding years it is the lowest during the present century, before which the rates were always much higher.

Nevertheless the increase of mortality by 16 per cent. over that of the previous year is unusually sudden, so its features deserve consideration.

The following table, derived from Table XVII, shows that in each sex the increase applies most to the extremes of life, young adults being comparatively little affected. It was greatest of all in early childhood and old age, about 20–25 per cent. in both cases.

Table I.—England and Wales.—Mortality at various Ages in
1929 per cent. of that in 1928.

	Males.	Females.	Persons.
All ages	114	117	116
(standardized)			
0—	120	124	122
5—	107	104	106
10—	104	109	106
15—	103	107	105
20—	108	104	106
25—	107	106	107
35—	113	107	110
45—	115	110	113
55—	111	113	112
65—	114	117	115
75—	119	124	122
85—	117	125	122

The causes of death chiefly responsible for this increase may be gathered from Table 5A. They are influenza, whooping cough, respiratory diseases, and diseases of the heart. Together, these causes account for 94 per cent. of the total increase for both males and females. The first quarter of the year was marked by a

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* Annuaire International de Statistique, 1916, p. viii.

period of severe weather—the coldest experienced since 1895—and a serious outbreak of influenza, the standardized rates for the year from this disease being the highest since the great epidemic of 1918–19. The increase of mortality from respiratory and heart diseases accords with the experience of many earlier outbreaks of influenza, and thus, as far as the latter was responsible for it, some of the increase in total mortality may be laid to its charge, whether the deaths were ascribed directly to influenza or to its respiratory and cardiac consequences. Besides these the other causes of death chiefly contributing to the rise of mortality in 1929 are diseases of the digestive system (increased by 6 per cent. for males and 4 for females) and old age, with increases of 7 and 8 per cent. for males and females respectively.

Mortality of different portions of the year.—Table 2 shows that the increase of mortality in 1929 affected mainly its first quarter, when the crude rate exceeded that of any of the nine preceding years. The rates for the second and third quarters were little higher than in 1928, and that for the fourth was distinctly low as compared with other recent years.

Mortality of each sex.—Comparing the sex rates age by age, excess for males is no longer, as in 1928, applicable to all ages, the rate for each sex at 10–15 being 1·7 per 1,000, while male excess at all ages jointly has fallen from 25 to 23 per cent., though even so it exceeds that for any quinquennium prior to 1916–20. These

Table II.—England and Wales.—Mortality of Males per cent. of that of Females at Various Ages from 1841–45 onwards. (*See* Table 3).

	All Ages Standardized.	0–	5–	10–	15–	20–	25–	35–	45–	55–	65–	75–	85–
1841–45	109	117	102	92	88	105	95	101	114	111	111	109	106
1846–50	108	116	103	95	91	104	94	99	113	112	111	109	107
1851–55	110	116	104	98	90	103	97	102	118	114	112	110	106
1856–60	109	115	99	96	90	102	96	103	118	115	121	108	107
1861–65	111	115	102	98	93	105	100	109	122	118	112	109	110
1866–70	113	115	107	100	94	106	105	113	124	120	115	109	111
1871–75	115	117	108	100	97	109	109	119	128	121	114	111	110
1876–80	116	118	107	97	96	108	109	119	129	122	114	112	111
1881–85	115	118	102	97	96	102	104	117	127	122	116	113	112
1886–90	116	119	100	97	98	106	107	117	129	122	117	112	114
1891–95	116	119	98	96	100	108	108	118	128	121	115	111	110
1896–00	118	118	98	96	106	120	116	122	129	124	117	113	109
1901–05	119	119	97	95	107	119	118	121	130	128	119	115	110
1906–10	120	119	97	95	107	121	118	121	129	128	121	115	113
1911–15	122	120	100	95	111	122	124	126	132	133	124	118	115
1916–20	124	121	100	92	114	122	124	131	135	137	132	121	111
1921–25	122	124	104	100	100	113	114	130	132	133	127	119	110
1921 ..	122	125	104	100	104	113	114	125	130	134	128	118	113
1922 ..	122	123	104	94	104	116	113	130	129	132	126	119	108
1923 ..	123	124	105	100	104	113	118	131	132	132	127	120	113
1924 ..	122	122	109	94	100	110	111	130	134	132	127	119	109
1925 ..	123	124	104	100	104	106	115	131	135	135	129	121	108
1926 ..	123	124	109	100	104	107	112	133	135	134	129	123	111
1927 ..	124	125	109	107	104	110	112	135	137	134	129	120	108
1928 ..	125	126	109	113	108	103	112	130	138	136	130	123	110
1929 ..	123	122	113	100	108	110	111	139	143	134	126	117	103

changes recorded in Table II, derived from Table 3, with substitution for 1911–15 and 1916–20 of rates based on total male population and deaths registered in this country for those in Table 3, which deal with civilian males only.

Table II shows that male excess is consistently least in childhood (5–20), when during last century the rate for females was frequently the higher, and then rises to a maximum in middle life, after which it falls again with advancing age.

The causes of death accounting for this large male excess may be gathered from Table 5A, in which the mortality disadvantage of females arising from their greater age is neutralized by reference of the rates for both sexes to a common population basis.

The causes chiefly accounting for male excess, with the contribution of each to its total of 2,342 per million, are seen to be, in order of importance, pneumonia (402), cancer of organs other than those of reproductive function (359), accident (356), tuberculosis (237), heart disease (177), and arterio-sclerosis (163). These six causes jointly contribute 72 per cent. of the total male excess.

Infant Mortality.

Of the 532,492 deaths registered during the year, 47,868, or 9·0 per cent., were those of infants under one year of age.

The rate of infant mortality resulting from these deaths is 74 per 1,000 live births, an increase of 9 per 1,000 over 1928.

It has been pointed out in previous Reviews that for the years 1915–22 the conventional statement of infant mortality (deaths under one year of age registered in the year per thousand live births registered in the same year) was an unreliable measure of the extent of infantile mortality, owing to violent fluctuations in the birth-rate during, or immediately preceding, those years. In the Report for 1920 a method was described for obtaining a more exact statement of infant mortality by stating the deaths in proportion, not to the births registered in the same year, but to all the infants born alive during the same three-monthly periods as those which died. The results of this correction are applied in Table III (rates in brackets), where it may be seen that since the period of violent fluctuations of the birth-rate came to an end the effect of this revision of the crude rate has been much less. As in 1926 it had become evident that the correction, which was without effect in two of the three preceding years, was no longer required, it was then discontinued ; but it is still necessary to retain the restated rates for earlier years in the table in order to secure any accuracy in statement of the recent history of infant mortality.

Table III.—England and Wales : Infant Mortality, distinguishing Mortality from Diarrhœal Diseases, 1861-1929.

Deaths under 1 year of age per 1,000 Live Births.

Year.	Diarrhœal Diseases.	Other Causes.	All Causes.	Year.	Diarrhœal Diseases.	Other Causes.	All Causes.	Year.	Diarrhœal Diseases.	Other Causes.	All Causes.
1861–65	15	136	151	1911	36 (36)	94 (93)	130 (129)	1921	14 (14)	69 (67)	83 (81)
1866–70	20	137	157	1912	8 (8)	87 (87)	95 (95)	1922	6 (5)	71 (70)	77 (75)
1871–75	19	134	153	1913	19 (19)	89 (90)	108 (109)	1923	7 (7)	62 (62)	69 (69)
1876–80	16	129	145	1914	17 (17)	88 (87)	105 (104)	1924	6 (6)	69 (68)	75 (74)
1881–85	14	125	139	1915	15 (15)	95 (91)	110 (106)	1925	7 (7)	68 (68)	75 (75)
1886–90	17	128	145								
1891–95	20	131	151	1916	11 (10)	80 (81)	91 (91)	1926	8	62	70
1896–00	31	125	156	1917	10 (9)	86 (82)	96 (91)	1927	6	64	70
1901–05	23	115	138	1918	10 (10)	87 (88)	97 (98)	1928	6	59	65
1906–10	18	99	117	1919	9 (9)	80 (84)	89 (93)	1929	7	67	74
1911–15	19 (19)	91 (90)	110 (109)	1920	8 (9)	72 (76)	80 (85)				
1916–20	9 (9)	81 (82)	90 (91)								
1921–25	8 (8)	68 (67)	76 (75)								

It will be seen from this table that the great and progressive fall in infant mortality which marked the first 28 years of the present century has been replaced by a substantial increase in 1929. This was no doubt due to the severe weather of the early part of the year. The weekly rates, for the 107 " Great Towns " of the Weekly Return, were above the year's average in each of the first 14 weeks, reaching a maximum of 161 per 1,000 in the eighth week (ending February 23rd).

This increase is seen from Table IV to apply to all stages of infancy, except the first day of life, at which period the previous fall is seen to have been less than at any other. The explanation may be that as during earlier years environmental conditions became more favourable to infant life, the newly born, whose mortality is comparatively little affected by environment, benefited least by this improvement, whereas conversely a sudden deterioration of these conditions in 1929 naturally also affected them least.

Table IV shows that the fall during the 24 years for which detailed age distinction is now available has been greatest (51 per cent.) at 3–6 months as in other recent years and least during early infancy, when many non-viable infants must be expected to perish, premature birth being largely responsible for the heavy mortality of the first day.

Distribution of Infant Mortality.—Table V shows how infant mortality was distributed in 1929 between the sexes and throughout the country.

The rates for the county boroughs and for the North are, as usual, in considerable excess, the highest rate in the table for infants of both sexes being 96 for the Northern county boroughs and the lowest 54 for the rural districts of the South. In

Table IV.—England and Wales: Age Distribution of Infant Mortality, 1881-1929.

Year.	Days.		Weeks.				Months.					Total under one year.
	0–1	1–7	0–1	1–2	2–3	3–4	Total under four weeks	Four weeks to 3 months	3–6	6–9	9–12	
1881–1885	—	—	—	—	—	—	67	28	44			139
1886–1890	—	—	—	—	—	—	69	30	46			145
1891–1895	—	—	—	—	—	—	74	31	46			151
1896–1900	—	—	—	—	—	—	74	34	48			156
1901–1905	—	—	—	—	—	—	70	28	40			138
1906–1910	11·5	13·0	24·5	5·8	5·7	4·2	40·2	22·8	22·0	17·3	14·8	117·1
1911–1915*	11·4	12·7	24·1	5·7	5·3	3·9	39·0	20·2	19·6	15·9	14·1	108·7
1916–1920*	11·0	12·4	23·4	5·6	4·7	3·4	37·0	16·5	14·6	12·0	10·8	90·9
1921–1925*	10·4	11·3	21·7	5·0	3·9	2·8	33·4	12·8	11·3	9·2	8·3	74·9
1906	11·8	13·2	25·0	6·1	6·2	4·6	41·9	25·7	27·0	20·7	17·2	132·5
1907	11·3	13·1	24·4	6·0	5·9	4·5	40·7	23·3	21·3	17·3	15·1	117·6
1908	11·5	12·8	24·3	5·9	5·8	4·3	40·3	24·2	23·6	17·7	14·6	120·4
1909	11·6	13·2	24·7	5·7	5·3	4·0	39·8	20·4	19·2	15·6	13·8	108·7
1910	11·5	12·5	24·1	5·4	5·1	3·8	38·5	20·0	18·8	15·0	13·2	105·4
1911*	11·6	12·7	24·3	6·0	6·0	4·5	40·6	24·7	25·9	20·6	17·4	129·2
1912*	11·3	12·9	24·2	5·6	5·0	3·7	38·4	17·7	14·9	12·5	11·4	94·7
1913*	11·8	12·7	24·5	5·8	5·4	3·9	39·5	20·3	19·8	15·7	13·6	108·9
1914*	11·4	12·7	24·1	5·5	5·0	3·9	38·5	19·3	18·7	15·0	13·0	104·4
1915*	10·9	12·5	23·4	5·7	5·0	3·7	37·7	18·6	18·2	16·0	15·2	105·8
1916*	10·9	12·3	23·2	5·6	4·9	3·4	36·9	16·9	15·2	11·7	10·3	91·1
1917*	11·0	12·4	23·4	5·6	4·8	3·4	37·1	16·9	15·0	11·6	10·6	91·1
1918*	11·1	12·1	23·2	5·5	4·6	3·4	36·6	17·1	16·1	14·4	13·7	97·9
1919*	12·2	13·7	25·9	6·1	4·9	3·6	40·4	16·4	14·4	11·8	10·3	93·2
1920*	10·4	11·5	21·9	5·3	4·6	3·3	35·0	15·5	13·0	11·0	10·0	84·5
1921*	10·8	11·6	22·4	5·4	4·5	3·0	35·2	14·7	13·7	9·7	7·8	81·2
1922*	10·4	11·6	22·0	5·2	4·1	2·8	33·9	12·4	10·6	9·2	8·6	74·7
1923*	10·2	10·9	21·1	4·6	3·6	2·6	31·9	11·4	10·0	8·3	7·6	69·2
1924*	10·6	11·2	21·8	4·8	3·8	2·6	33·0	12·4	10·8	9·3	8·8	74·2
1925*	10·1	11·1	21·2	4·7	3·7	2·7	32·3	12·5	11·2	9·4	9·0	74·5
1926	10·0	11·3	21·3	4·6	3·6	2·5	31·9	11·6	10·4	8·6	7·7	70·2
1927	10·6	11·6	22·2	4·3	3·4	2·5	32·3	10·7	9·7	8·7	8·2	69·7
1928	10·4	11·2	21·6	4·1	3·0	2·4	31·1	10·7	9·2	7·4	6·8	65·1
1929	10·4	11·9	22·3	4·6	3·3	2·6	32·8	11·6	10·7	9·9	9·4	74·4

Rates per 1,000 of those for 1906–10.

1906–1910	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1911–1915	991	977	984	983	930	929	970	886	891	919	953	928
1916–1920	957	954	955	966	825	810	920	724	664	694	730	776
1921–1925	904	869	886	862	684	667	831	561	514	532	561	640
1926	870	869	869	793	632	595	794	509	473	497	520	599
1927	922	892	906	741	596	595	803	469	441	503	554	595
1928	904	862	882	707	526	571	774	469	418	428	459	556
1929	904	915	910	793	579	619	816	509	486	572	635	635

* Corrected rates—see page 4.

each year from 1911 onwards the rate for the Northern county boroughs has been the highest in the table, and in each year except 1923 that for the rural districts of the South has been the lowest. For each class of area and for each sex mortality in 1929 decreased regularly from the North to the South of England, a statement applying also to each of the preceding 18 years.

The comparisons suggested by Table V are facilitated by Table VI, the chief features of which are also very constant from year to year, the greatest excess for the North being transferred from county boroughs to rural (and, in 1929, also urban) districts when comparison is made with the average for

Table V.—Distribution of Infant Mortality, 1929.*

	Males.					Females.					Both Sexes.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	79	—	79	—	—	63	—	63	—	—	71	—	71
County Boroughs ..	106	87	69	90	96	85	67	49	75	75	96	77	59	83	86
Other Urban Districts	96	71	61	80	78	75	54	50	66	61	85	63	56	73	69
Rural Districts ..	91	68	60	87	73	67	50	47	68	55	79	59	54	78	65
All Areas	101	75	70	84	83	79	57	55	69	65	90	67	62	77	74

districts of similar type and not for the country as a whole, while in the South a similar change in point of view transfers the lowest rate from rural districts to county boroughs.

The London advantage of 4 per cent. replaces an excess of equal extent in 1928, thereby restoring London to its usual position of moderately low mortality.

The extent of the fall in infant mortality during the past nineteen years, for which alone its distribution by administrative areas can be compared, but which cover much the greater part of the total fall since the commencement of the century (Table III), has been very uniform in different classes of area and parts of the country, Table VII showing that, as compared with the rates of about fifteen years earlier, the average reduction in 1929 of 33 per cent. is closely approximated to by all the sections of the population compared.

The fall is seen to be greatest in the small towns (as in 1928) and, next to them, in London. This leading position is, however, a novelty for the small towns, which prior to 1928 had not previously registered the greatest decline since 1918, whereas the London rate's reduction below the 1911–15 standard was the greatest for the four classes of area in each year 1923–27.

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* The " North " includes the administrative counties and county boroughs corresponding to the registration counties in the eighth, ninth, and tenth " registration divisions " of the Registrar-General, *i.e.*, Lancashire, Cheshire, and Yorkshire, and counties north of them. The " South " includes England south of the Thames, with the whole of the County of London and the five south-western counties, forming the first, second, and fifth registration divisions. " Wales " corresponds to the eleventh or Welsh registration division and so includes Monmouthshire. All the rest of the country, corresponding to the third, fourth, sixth, and seventh registration divisions, is included in the Midland area. The counties in the four areas are as follows :—

North.	Midlands.		South.	Wales.
Cheshire.	Middlesex.	Gloucestershire.	London.	Monmouthshire.
Lancashire.	Hertfordshire.	Herefordshire.	Surrey.	Glamorganshire.
Yorks, West Riding	Buckinghamshire.	Shropshire.	Kent.	Carmarthenshire.
,, East Riding.	Oxfordshire.	Staffordshire.	Sussex, East.	Pembrokeshire.
,, North Riding.	Northamptonshire.	Worcestershire.	,, West.	Cardiganshire.
Durham.	Soke of	Warwickshire.	Southampton.	Brecknockshire.
	Peterborough.			
Northumberland.	Huntingdonshire.	Leicestershire.	Isle of Wight	Radnorshire.
Cumberland.	Bedfordshire.	Rutlandshire.	Berkshire	Montgomeryshire.
Westmorland.	Cambridgeshire.	Lincolnshire,	Wiltshire.	Flintshire.
	Isle of Ely.	Parts of Holland.	Dorsetshire.	Denbighshire.
	Essex.	,, Kesteven.	Devonshire.	Merionethshire.
	Suffolk, East.	,, Lindsey.	Cornwall.	Caernarvonshire.
	,, West.	Nottinghamshire.	Somersetshire.	Anglesey.
	Norfolk.	Derbyshire.		

Table VI.—Proportionate Distribution of Infant Mortality, 1929.
(Both Sexes).

	Mortality per cent. of that in England and Wales.					Mortality per cent. of that in England and Wales in the same class of Area.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	96	—	96	—	—	—	—	—
County Boroughs . ..	129	104	79	111	115	112	90	69	97	100
Other Urban Districts.. ..	115	84	75	98	93	123	90	80	105	100
Rural Districts..	107	80	72	105	87	123	92	83	121	100
All Areas	121	90	84	103	100	—	—	—	—	—

Note.—These percentages are based on the rates in Table XI.

Table VII.—Distribution of the Recent Fall of Infant Mortality in England and Wales.

Percentage Reduction of Rate for 1929 compared with that for 1911–15 in each case.

	North	Midlands	South	Wales	England and Wales
London	—	—	35	—	35
County Boroughs ..	27	36	38	31	31
Other Urban Districts ..	30	36	33	41	36
Rural Districts	28	29	26	24	28
All Areas	28	34	35	34	33

Distribution of the Fall in Mortality of Various Stages of Infancy.—The reduction of mortality at various stages of infancy in the four classes of area distinguished is outlined for the period covered by this form of tabulation in Table VIII.

As in each of the seven preceding years this reduction was greatest, outside London, in the case of the small towns at 3–6 months, at which age their mortality decline has been greater than that for any of the other three classes of area in each of the last sixteen years.

London, on the other hand, holds a commanding advantage in regard to the first four weeks of life, at which age not only is its mortality, despite an increase of 5 per cent. in 1929, lowest amongst the four classes of area compared, as in every other year from 1911 onwards, but its reduction of 24·4 per cent. as compared with 1911–15 is also by far the greatest, the county boroughs coming next with 17·1 per cent. The London fall at this age was greatest also in each of the nine previous years. As a result of this differential fall in London "neo-natal" mortality, its advantage over the country at large at this age has increased from 12·3 per cent. in 1916–20 and 18·0 per cent. in 1921–25 to 21·2 in 1929 (24·4 in 1927), as shown in Table IX.

Table VIII.—Infant Mortality in Relation to Urbanization.
Mortality (per 1,000 Births) at various Stages of Infancy in different Classes of Area per 1,000 of that for 1911–15.

	Under 4 Weeks.				4 Weeks to 3 Months.				3–6 Months.			
	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.
1911–15 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1916–20 ..	949	943	940	971	834	810	790	834	793	739	691	726
1921–25 ..	800	855	862	871	574	640	627	672	605	604	550	577
1926 ..	743	821	825	824	519	589	546	622	548	556	485	521
1927 ..	714	828	848	844	448	531	512	623	476	516	466	503
1928 ..	718	798	801	813	544	537	497	543	598	500	387	449
1929 ..	756	829	844	893	553	572	544	632	581	580	483	534

	6–9 Months.				9–12 Months.				Total under 1 Year.			
	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.
1911–15 ..	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
1916–20 ..	735	729	685	739	738	732	701	736	833	818	800	851
1921–25 ..	578	604	568	583	592	643	573	602	655	700	683	721
1926 ..	501	562	502	541	513	571	497	536	591	654	624	671
1927 ..	504	547	509	580	456	603	549	637	547	640	630	692
1928 ..	583	458	415	434	577	488	406	468	620	599	564	619
1929 ..	676	647	548	600	652	700	592	629	656	689	649	721

Table IX.—Infant Mortality in Relation to Urbanization.
Mortality (per 1,000 Births) at various Stages of Infancy in different Classes of Area compared with that for England and Wales at the same Age, taken as 1,000.

	Under 4 Weeks.				4 Weeks–3 Months.				3–6 Months.			
	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.
1911–15 ..	878	1,068	998	966	1,022	1,147	972	790	1,075	1,164	966	735
1916–20 ..	877	1,061	989	987	1,050	1,144	945	812	1,169	1,178	915	730
1921–25 ..	820	1,066	1,004	982	924	1,156	960	837	1,115	1,204	910	726
1926 ..	798	1,073	1,008	974	925	1,179	926	858	1,118	1,228	888	727
1927 ..	756	1,067	1,021	984	862	1,147	937	927	1,038	1,218	913	748
1928 ..	791	1,070	1,004	985	1,057	1,171	917	815	1,376	1,245	800	706
1929 ..	788	1,051	1,001	1,023	989	1,148	926	875	1,153	1,246	861	724

	6–9 Months.				9–12 Months.				Total under 1 Year.			
	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.	London.	County Boroughs.	Urban Districts.	Rural Districts.
1911–15 ..	1,049	1,188	964	717	1,081	1,197	958	688	992	1,135	977	818
1916–20 ..	1,072	1,204	919	738	1,102	1,209	927	699	1,008	1,131	953	848
1921–25 ..	1,032	1,221	931	711	1,049	1,261	900	679	935	1,144	961	850
1926 ..	986	1,253	907	729	1,035	1,275	890	689	916	1,158	951	856
1927 ..	987	1,213	916	777	862	1,260	919	766	853	1,142	968	890
1928 ..	1,345	1,195	879	684	1,330	1,244	830	686	1,036	1,144	929	853
1929 ..	1,158	1,255	862	703	1,084	1,289	873	666	958	1,151	934	870

In later infancy the London rate compares much less favourably with the general average. It has been in excess at 3–6 months in each year 1911–29, this excess being generally, as in 1929, accounted for largely by diarrhœa. In 1929 70 per cent. of the London excess at this age was so caused.

Table X.—Deaths during various Portions of the first year of Life, 1929.

		Days.		Weeks.				Months.					Total under one Year.
		0-1	1-7	0-1	1-2	2-3	3-4	Total under 4 weeks.	4 weeks to 3 m'nths	3-6	6-9	9-12	
All Infants	M	3,839	4,424	8,263	1,641	1,244	1,017	12,165	4,423	3,956	3,572	3,265	27,381
	F	2,845	3,223	6,068	1,328	897	678	8,971	3,018	2,933	2,811	2,754	20,487
	P	6,684	7,647	14,331	2,969	2,141	1,695	21,136	7,441	6,889	6,383	6,019	47,868
Legitimate	M	3,488	4,134	7,622	1,496	1,160	928	11,206	4,040	3,641	3,341	3,089	25,317
	F	2,547	2,994	5,541	1,218	825	623	8,207	2,727	2,700	2,614	2,613	18,861
	P	6,035	7,128	13,163	2,714	1,985	1,551	19,413	6,767	6,341	5,955	5,702	44,178
Illegitimate	M	351	290	641	145	84	89	959	383	215	231	176	2,064
	F	298	229	527	110	72	55	764	291	233	197	141	1,626
	P	649	519	1,168	255	156	144	1,723	674	548	428	317	3,690
All Areas. North ..		2,496	3,010	5,506	1,228	875	719	8,328	3,083	2,980	2,823	2,802	20,016
Midlands		2,138	2,395	4,533	940	686	483	6,642	2,149	1,903	1,775	1,642	14,111
South ..		1,504	1,632	3,136	583	412	349	4,480	1,691	1,559	1,387	1,204	10,321
Wales ..		546	610	1,156	218	168	144	1,686	518	447	398	371	3,420
London		625	648	1,273	233	168	139	1,813	801	865	805	711	4,995
County Boroughs — England & Wales		2,450	2,774	5,224	1,084	829	653	7,790	2,995	3,009	2,810	2,719	19,323
North ..		1,380	1,626	3,006	666	487	412	4,571	1,775	1,843	1,758	1,747	11,694
Midlands		733	797	1,530	311	242	160	2,243	897	848	791	731	5,510
South ..		206	222	428	72	61	54	615	214	204	154	133	1,320
Wales ..		131	129	260	35	39	27	361	109	114	107	108	799
Other Urban Districts — England & Wales		2,260	2,583	4,843	1,047	692	568	7,150	2,327	2,004	1,859	1,776	15,116
North ..		763	932	1,695	401	277	213	2,586	919	810	770	768	5,853
Midlands		848	940	1,788	383	265	196	2,632	777	688	648	618	5,363
South ..		403	417	820	161	88	95	1,164	399	312	257	205	2,337
Wales ..		246	294	540	102	62	64	768	232	194	184	185	1,563
Rural Districts — England & Wales		1,349	1,642	2,991	605	452	335	4,383	1,318	1,011	909	813	8,434
North ..		353	452	805	161	111	94	1,171	389	327	295	287	2,469
Midlands		557	658	1,215	246	179	127	1,767	475	367	336	293	3,238
South ..		270	345	615	117	95	61	888	277	178	171	155	1,669
Wales ..		169	187	356	81	67	53	557	177	139	107	78	1,058
England and Wales 1st Quarter		1,804	2,297	4,101	1,013	812	630	6,556	2,676	2,672	3,007	2,963	17,874
2nd ,,		1,633	1,962	3,595	689	478	378	5,140	1,575	1,322	1,321	1,268	10,626
3rd ,,		1,630	1,594	3,224	590	392	311	4,517	1,360	1,203	908	838	8,826
4th ,,		1,617	1,794	3,411	677	459	376	4,923	1,830	1,692	1,147	950	10,542

Tables X and XI continue the analysis of infant mortality by detail of age, initiated in 1905 with distinction of registration counties mainly urban and mainly rural in character, and expanded in 1917 to the degree of geographical distinction now in use, but curtailed in detail of age (after the first four weeks of life) in 1926. Distinctions of sex and legitimacy are shown only for England and Wales as a whole, but are available for each of the populations dealt with. Some of the facts and rates applying to the illegitimate will be found in Table 13.

Table XI.—Infant Mortality at various Ages, 1929.

			Days.		Weeks.				Months.					Total under one year.
			0–1	1–7	0–1	1–2	2–3	3–4	Total under 4 weeks	4 weeks to 3 m'nths	3–6	6–9	9–12	
England and Wales	All Infants	M	11·7	13·5	25·1	5·0	3·8	3·1	37·0	13·5	12·0	10·9	9·9	83·3
		F	9·0	10·2	19·3	4·2	2·8	2·2	28·5	9·6	9·3	8·9	8·7	65·0
		P	10·4	11·9	22·3	4·6	3·3	2·6	32·8	11·6	10·7	9·9	9·4	74·4
	Legitimate	M	11·1	13·2	24·3	4·8	3·7	3·0	35·7	12·9	11·6	10·6	9·8	80·7
		F	8·5	10·0	18·4	4·1	2·7	2·1	27·3	9·1	9·0	8·7	8·7	62·8
		P	9·8	11·6	21·4	4·4	3·2	2·5	31·6	11·0	10·3	9·7	9·3	71·9
	Illegitimate	M	23·7	19·6	43·3	9·8	5·7	6·0	64·8	25·9	21·3	15·6	11·9	139·4
		F	20·6	15·8	36·3	7·6	5·0	3·8	52·7	20·1	16·1	13·6	9·7	112·1
		P	22·1	17·7	39·9	8·7	5·3	4·9	58·8	23·0	18·7	14·6	10·8	125·9
All Areas.	North		11·2	13·6	24·8	5·5	3·9	3·2	37·5	13·9	13·4	12·7	12·6	90·2
	Midlands		10·1	11·3	21·4	4·4	3·2	2·3	31·4	10·1	9·0	8·4	7·8	66·6
	South		9·1	9·9	19·0	3·5	2·5	2·1	27·1	10·2	9·4	8·4	7·3	62·4
	Wales		12·2	13·7	25·9	4·9	3·8	3·2	37·8	11·6	10·0	8·9	8·3	76·7
London			8·9	9·2	18·2	3·3	2·4	2·0	25·9	11·4	12·3	11·5	10·1	71·3
County Boroughs	England and Wales		10·9	12·3	23·2	4·8	3·7	2·9	34·5	13·3	13·3	12·5	12·0	85·6
	North		11·3	13·3	24·6	5·5	4·0	3·4	37·4	14·5	15·1	14·4	14·3	95·7
	Midlands		10·3	11·2	21·4	4·4	3·4	2·2	31·4	12·6	11·9	11·1	10·2	77·1
	South		9·2	9·9	19·1	3·2	2·7	2·4	27·5	9·6	9·1	6·9	5·9	59·0
	Wales		13·6	13·4	26·9	3·6	4·0	2·8	37·4	11·3	11·8	11·1	11·2	82·7
Other Urban Districts	England and Wales		10·4	11·9	22·3	4·8	3·2	2·6	32·9	10·7	9·2	8·5	8·2	69·5
	North		11·1	13·6	24·7	5·8	4·0	3·1	37·7	13·4	11·8	11·2	11·2	85·3
	Midlands		9·9	11·0	20·9	4·5	3·1	2·3	30·8	9·1	8·0	7·6	7·2	62·7
	South		9·6	10·0	19·6	3·8	2·1	2·3	27·8	9·5	7·4	6·1	4·9	55·8
	Wales		11·5	13·7	25·2	4·8	2·9	3·0	35·9	10·8	9·1	8·6	8·6	73·0
Rural Districts	England and Wales		10·3	12·6	22·9	4·6	3·5	2·6	33·6	10·1	7·8	7·0	6·2	64·7
	North		11·4	14·5	25·9	5·2	3·6	3·0	37·7	12·5	10·5	9·5	9·2	79·5
	Midlands		10·2	12·0	22·2	4·5	3·3	2·3	32·3	8·7	6·7	6·1	5·4	59·2
	South		8·7	11·1	19·8	3·8	3·1	2·0	28·5	8·9	5·7	5·5	5·0	53·7
	Wales		12·5	13·8	26·3	6·0	5·0	3·9	41·2	13·1	10·3	7·9	5·8	78·2

The features of Table XI closely resemble those of its predecessors, showing, in addition to increase of mortality with urbanization, almost constant increase also from the South to the North of England from the first day of life onwards in all classes of area.

Urban excess, on the other hand, is not as a rule present from birth, but gradually increases throughout the later months of infancy, till at 9–12 months the rate for the county boroughs is not far from double (in 1929 1·9 times) that for the rural districts. For the first day of life, however, the highest rate in Table XI is that of the Welsh county boroughs. In most years, as in 1929, the London rate for the first day is well below average, and in many previous years the highest rate for this day has been that of the Northern rural districts. During the remainder of the first week of life, also, mortality is very much the same in town and country, the contrast at this age being between London and the rest of England and Wales.

The extent of these differences is better seen in Table XII, where the rates in Table XI are shown as percentages of those for England and Wales at the same age.

Table XII.—Infant Mortality at various Ages, in different Classes of Area and Sections of the Country, per cent. of that of all Infants of the same Age in England and Wales, 1929.

	Days.		Weeks.				Months.					Total under 1 year
	0–1	1–7	0–1	1–2	2–3	3–4	Total under 4 weeks.	4 weeks to 3 months	3–6	6–9	9–12	
England and Wales P	100	100	100	100	100	100	100	100	100	100	100	100
M	112	113	113	109	115	119	113	116	112	110	105	112
F	87	86	87	91	85	85	87	83	87	90	93	87
All Areas												
North	108	114	111	120	118	123	114	120	125	128	134	121
Midlands	97	95	96	96	97	88	96	87	84	85	83	90
South	88	83	85	76	76	81	83	88	88	85	78	84
Wales	117	115	116	107	115	123	115	100	93	90	88	103
London	86	77	82	72	73	77	79	98	115	116	107	96
County Boroughs—												
England and Wales	105	103	104	104	112	112	105	115	124	126	128	115
North	109	112	110	120	121	131	114	125	141	145	152	129
Midlands	99	94	96	96	103	85	96	109	111	112	109	104
South	88	83	86	70	82	92	84	83	85	70	63	79
Wales	131	113	121	78	121	108	114	97	110	112	119	111
Other Urban Districts—												
England and Wales	100	100	100	104	97	100	100	92	86	86	87	93
North	107	114	111	126	121	119	115	116	110	113	119	115
Midlands	95	92	94	98	94	88	94	78	75	77	77	84
South	92	84	88	83	64	88	85	82	69	62	52	75
Wales	111	115	113	104	88	115	109	93	85	87	91	98
Rural Districts—												
England and Wales	99	106	103	100	106	100	102	87	73	71	66	87
North	110	122	116	113	109	115	115	108	98	96	98	107
Midlands	98	101	100	98	100	88	98	75	63	62	57	80
South	84	93	89	83	94	77	87	77	53	56	53	72
Wales	120	116	118	130	152	150	126	113	96	80	62	105

It may be noted that the two contrasts, that between the rates for the North and South of England, and that between those of the county boroughs and of the rural districts, are of very similar extent for the first year of life as a whole, the Northern excess being 21 per cent. (Table XII), and the county borough excess 15. But the urban excess commences later in life, and becomes much more developed in later infancy, than the Northern.

Deaths occurring immediately after birth.—The separate tabulation of deaths registered as occurring within 30 minutes of birth, first published in the Review for 1928, is repeated for 1929 in Table XIII.

The table shows that this very early mortality displays in 1929 the same startling differential incidence upon the illegitimate as in 1928, especially so far as those causes of death are concerned which imply, or are likely to mask, the operation of violence or neglect. Thus whereas the mortality of legitimate infants from accidental suffocation within 30 minutes of birth was 5 per million births, that of the illegitimate was 375, and similarly,

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Table XIII.—England and Wales, 1929.—Mortality of the first 30 Minutes of Life.

International List Numbers	Cause of Death.	All Infants.	Legitimate.			Illegitimate.		
			Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.
		Deaths.						
79, 80	Convulsions	4	2	2	4	—	—	—
159	Congenital malformations	67	32	25	57	6	4	10
160 (1)	Congenital debility	54	33	17	50	2	2	4
161 (1)	Premature birth	402	202	172	374	18	10	28
161 (2)	Injury at birth	177	88	64	152	15	10	25
162 (2)	Atelectasis	94	44	39	83	7	4	11
160 (2), 162(1, 3)	Other diseases peculiar to early infancy	6	3	—	3	3	—	3
163	Lack of care	194	24	32	56	67	71	138
180	Accidental suffocation	14	2	1	3	6	5	11
197–199	Homicide	20	—	—	—	6	14	20
	Other forms of violence	17	1	—	1	10	6	16
	Violence and lack of care	*245*	*27*	*33*	*60*	*89*	*96*	*185*
	Other causes	26	6	2	8	16	2	18
	All causes	1,075	437	354	791	156	128	284
		Mortality per Million (live) Births.						
79, 80	Convulsions	6	6	7	7	—	—	—
159	Congenital malformations	104	102	83	93	405	276	341
160 (1)	Congenital debility	84	105	57	81	135	138	136
161 (1)	Premature birth	625	644	572	609	1,216	690	955
161 (2)	Injury at birth	275	280	213	247	1,013	690	853
162 (2)	Atelectasis	146	140	130	135	473	276	375
160 (2), 162(1,3)	Other diseases peculiar to early infancy	9	10	—	5	203	—	102
163	Lack of care	301	76	106	91	4,525	4,896	4,709
180	Accidental suffocation	22	6	3	5	405	345	375
197–199	Homicide	31	—	—	—	405	965	682
	Other forms of violence	26	3	—	2	675	414	546
	Violence and lack of care	*381*	*86*	*110*	*98*	*6,011*	*6,620*	*6,312*
	Other causes	40	19	7	13	1,081	138	614
	All causes	1,670	1,392	1,178	1,288	10,536	8,827	9,691
		Percentage of Total under 24 hours.						
79, 80	Convulsions	5	5	6	6	—	—	—
159	Congenital malformations	16	16	12	14	67	40	53
160 (1)	Congenital debility	15	16	13	15	18	22	20
161 (1)	Premature birth	9	9	10	9	11	7	9
161 (2)	Injury at birth	31	27	32	29	58	63	60
162 (2)	Atelectasis	19	17	17	17	50	31	41
160 (2), 162(1,3)	Other diseases peculiar to early infancy	12	13	—	7	50	—	43
163	Lack of care	91	92	86	89	89	93	91
180	Accidental suffocation	44	22	11	17	75	83	79
197–199	Homicide	87	—	—	—	67	100	87
	Other forms of violence	81	50	—	50	91	75	84
	Violence and lack of care	*84*	*73*	*72*	*72*	*86*	*92*	*89*
	Other causes	37	20	13	17	84	33	72
	All causes	16	13	14	13	44	43	44

extreme contrasts are recorded for lack of care, homicide, and other forms of violence. For violence and lack of care as a whole a rate of 6,312 per million for illegitimate infants compares with one of 98 for the legitimate; 84 per cent. of all such deaths under 24 hours occur within this first half hour, as against 16 per cent. for mortality generally, so that the risk represented by violence and lack of care is one applying especially to this first

half-hour of life. But in Table XIII there is much less indication than in its counterpart for 1928 of differential incidence of mortality on the female sex amongst illegitimate infants. Moreover, the increase of illegitimate excess for the mortality of the first 24 hours of life, illustrated in Diagram 1 of the Review for 1928, no longer applies in 1929, the rates for the illegitimate of both sexes having fallen considerably since 1928, while those for the legitimate are little changed.

Table XIV.—England and Wales : Comparison of Infant Mortality Rates (per 1,000 Live Births) in 1929 with those of recently preceding years.

	Under 4 weeks.	4 weeks to 3 months.	3-6 months.	6-9 months.	9-12 months.	Under 1 year.
	Increase or Decrease of Mortality in 1929, per cent. of that in 1928.					
	+ 6	+ 9	+ 16	+ 35	+ 39	+ 14
	Increase or Decrease of Mortality in 1929, per cent. of that in 1924-28.					
	+ 2	− 1	+ 3	+ 13	+ 14	+ 5
	Increase or Decrease from various Causes, as compared with 1924-28.					
Measles (7)	—	− 0·01	− 0·02	− 0·10	− 0·18	− 0·31
Whooping cough (9)	+ 0·01	+ 0·13	+ 0·29	+ 0·43	+ 0·41	+ 1·27
Influenza (11)	+ 0·02	+ 0·02	+ 0·10	+ 0·15	+ 0·17	+ 0·47
Tuberculosis, all forms (31-37)	− 0·01	− 0·02	− 0·02	− 0·08	− 0·05	− 0·18
Convulsions (80)	− 0·27	− 0·21	− 0·15	− 0·08	− 0·06	− 0·78
Bronchitis and pneumonia (99-101)	+ 0·07	− 0·03	+ 0·35	+ 0·59	+ 0·77	+ 1·75
Diarrhoea and enteritis (113)	—	+ 0·16	+ 0·07	+ 0·18	+ 0·01	+ 0·43
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	+ 0·50	− 0·10	− 0·24	− 0·04	− 0·02	+ 0·09
Congenital defects (malformations and atelectasis) (159, 162 : 2).	*+ 0·47*	*+ 0·17*	*− 0·01*	*+ 0·02*	*—*	*+ 0·62*
Congenital debility, sclerema and icterus (160).	*− 0·55*	*− 0·28*	*− 0·22*	*− 0·05*	*− 0·02*	*− 1·13*
Premature birth (161 : 1)	*+ 0·58*	*+ 0·01*	*− 0·02*	*—*	*—*	*+ 0·59*
Injury at birth (161 : 2)	+ 0·47	+ 0·02	+ 0·01	—	—	+ 0·48
Suffocation—in bed or not stated how (180 part).	—	− 0·04	+ 0·01	+ 0·01	—	− 0·01
Other causes	− 0·10	− 0·02	+ 0·01	+ 0·07	+ 0·07	+ 0·02
All causes	+ 0·69	− 0·10	+ 0·36	+ 1·13	+ 1·13	+ 3·21
	Percentage Increase or Decrease as compared with 1924-28.					
Measles (7)	—	− 25	− 22	− 25	− 23	− 23
Whooping cough (9)	+ 14	+ 25	+ 49	+ 59	+ 52	+ 47
Influenza (11)	+ 29	+ 14	+ 63	+ 79	+ 94	+ 64
Tuberculosis, all forms (31-37)	− 50	− 22	− 7	− 21	− 12	− 15
Convulsions (80)	− 16	− 30	− 30	− 24	− 25	− 23
Bronchitis and pneumonia (99-101)	+ 5	− 1	+ 10	+ 15	+ 21	+ 11
Diarrhoea and enteritis (113)	—	+ 10	+ 3	+ 14	+ 1	+ 6
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	+ 2	− 3	− 18	− 9	− 9	+ 0
Congenital defects (malformations and atelectasis) (159, 162 : 2).	*+ 11*	*+ 16*	*− 2*	*+ 11*	*—*	*+ 10*
Congenital debility, sclerema and icterus (160)	*− 17*	*− 22*	*− 31*	*− 24*	*− 20*	*− 20*
Premature birth (161 : 1)	*+ 4*	*+ 1*	*− 11*	*—*	*—*	*+ 3*
Injury at birth (161 : 2)	+ 30	+ 67	+ 27	—	—	+ 30
Suffocation—in bed or not stated how (180 part).	—	− 21	+ 10	+ 50	—	− 2
Other causes	− 4	− 2	+ 1	+ 6	+ 6	+ 0
All causes	+ 2	− 1	+ 3	+ 13	+ 14	+ 5

Note.—The percentages in this table are based on rates per 100,000 live births, and differ on this account from those derivable from Table IV.

Causes of Infant Mortality.—The causes of infant mortality are set forth in Tables 8–12, which compare the records of 1929 with those of previous years, and show the incidence of mortality from each cause upon infants distinguished by sex, age, legitimacy, class of area, and section of the country. From these tables has been prepared the comparison in Table XIV between the mortality from the chief causes distinguished at various ages in 1929, 1928, and 1924–28.

The increase of 14 per cent. in 1929 is seen to have been shared by all stages of infancy, but to have applied particularly to its later months, which are those most affected by environmental influences (cf. the contrast between town and country in Table XII). The exclusion of the first 24 hours of life from this increase has already been pointed out on page 5, where the suggested explanation of relative unsusceptibility to environment at this early age accords with that put forward here of the maximum increase during later infancy as due to adverse changes in environmental conditions during 1929.

The most important increases as compared with the average rates for the preceding five years are from bronchitis and pneumonia (1·75) and whooping cough (1·27), as might be expected in view of the severity of the winter, the increases (over 1928) affecting especially the later age-groups (6–9 and 9–12 months), when adverse conditions have most effect. The chief decreases —1·13 per 1,000 births from congenital debility and 0·78 from convulsions—are presumably unrelated to the circumstances of the year, as each may be seen from Table 9 to fall into line with a long series of declines in yearly mortality attributed to these indefinite causes, the deaths formerly so returned being now no doubt more and more referred to other and more definite headings. These may include premature birth, birth injury, and congenital malformation—all, like congenital debility, chiefly affecting early infancy, and all registering increase in 1929, as well as, premature birth excepted, in the earlier years covered by Table 9.

Table XV, which contrasts the mortality of male with that of female, and of legitimate with that of illegitimate infants, shows that the excess in mortality of males, which had increased with the fall of infant mortality during the present century to a maximum of 32 per cent. in 1928, fell, with its rise in 1929, to 28 per cent. It was, as usual, greatest in the first few weeks, and especially the second and third months of life, and greater for the legitimate than the illegitimate.

This male excess is shared, as usual, by all the causes distinguished in Table XV except whooping cough, its extent ranging from 13 per cent. for measles to 53 for congenital debility.

Excess for the illegitimate is, as usual, very much greater for syphilis than for any other cause distinguished in the table.

Table XV.—England and Wales : Infant Mortality by Sex and Legitimacy, 1929.

| | Deaths per 1,000 Live Births. | | | | | | Mortality per cent. | | | | |
| | All Infants. | | Legitimate Infants. | | Illegitimate Infants. | | Male of Female Infants. | | | Illegitimate of Legitimate Infants. | |
	Male.	Female.	Male.	Female.	Male.	Female.	All Infants.	Legitimate.	Illegitimate	Male	Female.
All causes. Under four weeks	37·02	28·48	35·71	27·31	64·77	52·69	130	131	123	181	193
4 weeks—3 months	13·46	9·58	12·87	9·07	25·87	20·07	141	142	129	201	221
3–6 months	12·04	9·31	11·60	8·98	21·28	16·07	129	129	132	183	179
6–9 ,, ...	10·87	8·92	10·65	8·70	15·60	13·59	122	122	115	146	156
9–12 ,, ...	9·93	8·74	9·84	8·69	11·89	9·72	114	113	122	121	112
Total under 1 year	83·32	65·03	80·67	62·76	139·40	112·13	128	129	124	173	179
All ages under one year. Measles (7)	1·08	0·96	1·07	0·94	1·15	1·31	113	114	88	107	139
Whooping Cough (9) ..	3·49	4·46	3·50	4·44	3·44	5·03	78	79	68	98	113
Tuberculosis, all forms (31–37)	1·13	0·92	1·10	0·93	1·69	0·76	123	118	222	154	82
Syphilis (38)	0·75	0·53	0·62	0·44	3·51	2·48	142	141	142	566	564
Convulsions (80)	3·07	2·20	3·02	2·13	4·05	3·72	140	142	109	134	175
Bronchitis and pneumonia (99–101).	19·83	14·88	19·52	14·71	26·48	18·28	133	133	145	136	124
Diarrhœa and enteritis (113)	8·29	5·95	7·83	5·57	18·10	13·72	139	141	132	231	246
Developmental and wasting diseases (159, 160, 161 : 1, 162 : 2).	33·36	26·32	32·23	25·32	57·21	47·10	127	127	121	178	186
Congenital defects (malformations and atelectasis) (159, 162 : 2).	*7·30*	*6·26*	*7·23*	*6·16*	*8·78*	*8·27*	*117*	*117*	*106*	*121*	*134*
Congenital debility, sclerema and icterus (160)	*5·41*	*3·54*	*5·07*	*3·32*	*12·50*	*8·00*	*153*	*153*	*156*	*247*	*241*
Premature birth (161 : 1) ..	*20·64*	*16·53*	*19·92*	*15·84*	*35·93*	*30·83*	*125*	*126*	*117*	*180*	*195*
Other causes	12·32	8·81	11·78	8·28	23·77	19·73	140	142	120	202	238
All causes	83·32	65·03	80·67	62·76	139·40	112·13	128	129	124	173	179

Distribution throughout the country of Infant Mortality from various causes.—Table XVI, which is derived from Table 12, furnishes an analysis by cause of the differences in total mortality under one year of age shown in Tables V and VI.

The greatest departures from the average mortality of the whole country in Table 12 are furnished by the county boroughs of the North, with excesses under every cause distinguished, except congenital malformations and overlying, aggregating to 21·35 deaths per 1,000 live births, an excess of 29 per cent. over the average for England and Wales ; and by the rural districts of the South, with comparatively favourable experience under every head distinguished, except congenital malformations and birth injury, yielding a total rate 28 per cent. lower than the general average.

As usual, three causes contribute more than any other to these differences, the three being bronchitis and pneumonia, diarrhœa, and premature birth. This was the case also in each of the seven preceding years, so the predominant influence of these causes in determining local variations of infant mortality is evident. Jointly they account in 1929 for 73 per cent. of the divergence in the county boroughs of the North above the mean,

Table XVI.—Comparison of Infant Mortality from the Principal Causes in different Classes of Area and Sections of the Country, 1929.

—	Measles (7).	Whooping Cough (9).	Tuberculosis, all forms (31–37).	Syphilis (38).	Convulsions (80).	Bronchitis and Pneumonia (99–101).	Diarrhœa and Enteritis (113).	Congenital Malformations (159).	Congenital Debility & Sclerema (160:1).	Premature Birth (161:1).	Injury at Birth (161:2).	Suffocation—in bed, or not stated how (180 pt.).	Other Causes.	All Causes.
Differences from Rates for England and Wales per 100,000 Live Births.														
All Areas—														
North	+ 79	+ 54	+14	+ 20	+114	+623	+192	+ 25	+ 91	+256	+ 5	− 4	+115	+ 1,584
Midlands	− 41	− 86	+ 2	− 10	− 73	−290	−135	− 1	− 31	− 30	− 6	+ 7	− 79	− 773
South	− 66	+ 32	−15	− 9	−124	−437	− 29	− 29	− 99	−353	+ 5	− 3	− 72	− 1,199
Wales	+ 46	+ 18	−33	− 17	+247	−103	−200	− 4	+ 64	+175	− 8	−12	+ 59	+ 232
London	− 41	+218	−26	− 11	−154	− 38	+279	− 63	−124	−382	+10	−11	+ 33	− 310
County Boroughs—														
England and Wales	+ 83	− 8	+26	+ 23	+ 20	+460	+268	− 4	+ 25	+159	+ 9	+ 3	+ 64	+ 1,126
North	+128	+ 56	+28	+ 33	+ 83	+848	+420	− 11	+ 96	+283	+11	—	+160	+ 2,135
Midlands	+ 32	− 71	+29	+ 13	− 72	+169	+137	+ 27	− 45	+ 97	− 7	+ 9	− 45	+ 273
South	− 89	−160	+18	+ 3	− 85	−595	− 3	− 37	−121	−365	+67	− 8	−160	− 1,535
Wales	+281	− 14	+ 1	+ 19	+140	+154	− 62	− 65	− 68	+259	−34	+26	+197	+ 834
Other Urban Districts—														
England and Wales	− 33	− 4	− 7	− 7	+ 1	−161	−183	+ 24	− 8	− 39	−19	+ 5	− 57	− 488
North	+ 32	+ 81	+14	+ 20	+129	+478	−117	+106	+ 76	+226	−10	− 2	+ 57	+ 1,090
Midlands	− 81	− 43	− 4	− 22	− 97	−423	−196	− 12	− 55	−133	−11	+10	−103	− 1,170
South	− 73	− 80	−22	− 14	−111	−707	−244	− 7	− 83	−338	−38	+17	−159	− 1,859
Wales	+ 24	+ 28	−61	− 22	+198	− 96	−224	− 34	+ 59	+ 71	−42	−15	− 23	− 137
Rural Districts—														
England and Wales	− 65	− 97	−21	− 21	+ 50	−506	−307	+ 2	+ 40	− 4	+13	−10	− 44	− 970
North	− 12	− 17	−39	− 29	+199	+ 59	− 22	− 15	+103	+216	+15	−25	+ 76	+ 509
Midlands	− 73	−172	−23	− 22	− 36	−680	−396	− 21	+ 24	− 33	+ 2	+ 1	− 89	− 1,518
South	− 96	− 98	− 3	− 6	−103	−856	−454	+ 23	− 48	−297	+ 9	− 6	−136	− 2,071
Wales	− 87	+ 24	−14	− 34	+401	−298	−263	+ 86	+166	+281	+64	−35	+ 95	+ 386
Rates per cent. of those for England and Wales.														
All Areas—														
North	177	114	114	131	143	136	127	105	123	114	102	93	111	121
Midlands	60	78	102	84	72	83	81	100	92	98	97	112	92	90
South	35	108	85	86	53	75	96	94	75	81	102	95	93	84
Wales	145	105	68	73	194	94	72	99	116	109	96	79	106	103
London	60	155	75	83	42	98	139	88	68	79	105	81	103	96
County Boroughs—														
England and Wales	181	98	125	136	108	126	138	99	106	109	104	105	106	115
North	225	114	127	152	131	149	159	98	125	115	105	100	116	129
Midlands	131	82	128	120	73	110	119	105	88	105	97	116	96	104
South	13	60	117	105	68	66	100	93	69	80	132	86	84	79
Wales	375	96	101	130	153	109	91	88	83	114	84	146	119	111
Other Urban Districts—														
England and Wales	68	99	93	89	100	91	74	105	98	98	91	109	94	93
North	131	120	114	131	149	127	84	120	120	112	95	96	106	115
Midlands	21	89	96	66	63	76	73	98	86	93	95	118	90	84
South	28	80	79	78	58	59	66	99	79	82	82	130	84	75
Wales	124	107	41	66	175	94	69	93	115	104	80	74	98	98
Rural Districts—														
England and Wales	36	76	80	67	119	71	57	100	110	100	106	82	96	87
North	88	96	62	55	175	103	97	97	126	112	107	56	107	107
Midlands	28	57	78	66	86	61	45	96	106	98	101	102	91	80
South	6	75	97	91	61	51	36	104	88	84	104	89	87	72
Wales	15	106	86	47	252	83	63	117	143	115	130	39	109	105

and for 78 per cent. of that in the rural districts of the South below it. Much the most potent influence is that of bronchitis and pneumonia, which is always of chief importance.

Mortality from bronchitis and pneumonia (considered jointly because of evidence of interchangeability between these forms of return) is very greatly and consistently in excess in the North of England, particularly in its great towns. During the last twelve

years the Northern excess over the general average, 36 per cent. in 1929, has varied only between 24 and 41 per cent., while in the same period excess for the Northern county boroughs, 49 per cent. in 1929, has ranged from 31 to 57 per cent. Urbanization also is a powerful factor in promoting this, like most other forms of infant mortality. During each of the thirteen years 1917–29 excess for the county boroughs has been recorded, varying from 11 to 28 per cent. (26 in 1929), while the rate for the rural districts has been as constantly below the mean, the difference ranging from 14 to 35 per cent. (29 in 1929). In the South this rural advantage generally amounts, as in 1929, to about 50 per cent.

The constancy of both these features of the distribution of respiratory mortality in infancy—increase from South to North and from the country to the great towns—is remarkable. The thirteen years for which comparison can be made present no exception in any class of area to the rule of increase from South to North, nor, for the country at large, to that of increase from rural to city life.

Mortality from diarrhœa increases from South to North in about the average degree applying to all causes generally. No exception to the rule has occurred for any class of area in any of the last thirteen years. But the extent of its increase with urbanization is outstanding, the range of its deviations from average in Table XVI being greater than for either bronchitis and pneumonia or premature birth. During the last thirteen years excess for the county boroughs (over England and Wales) has varied between 16 and 41 per cent., while the rates for the urban and rural districts have been uniformly below the general average, especially the latter. In twelve of these thirteen years the lowest rate of all has been that for the rural districts of the South, which has ranged from 46 to 71 per cent. below average. London diarrhœa mortality is uniformly high, its excess over the general average having ranged during 1911–29 from 10 to 69 per cent. This excess is greatest at 3–6 months, the age of greatest diarrhœal mortality, at which age London excess has ranged during 1911–29 from 13 to 95 per cent.

The third chief cause of local differences in infant mortality, premature birth, is more closely associated with geographical position than with urbanization, there being no exception in its case to the rule of increase from South to North in any class of area in any of the thirteen years 1917–29. The association with urbanization, on the other hand, is much less constant, being manifested chiefly in the form of excess for the county boroughs. The low London rates, which have varied from 75 to 94 per cent. of those for England and Wales, also indicate the slight degree of association with urbanization.

Next to prematurity, bronchitis and pneumonia, and diarrhœa, which in each of the last seven years (Table 9) have ranked in this order as the principal causes of infant mortality, come, for 1929, congenital malformations, whooping cough, congenital debility, and convulsions. The rate for whooping cough (3·97 per 1,000 births) was higher than in any of the ten preceding years, and congenital malformations is steadily increasing in importance amongst the causes of infant deaths. This increase affects all sections of the population to much the same extent, but mortality tends to be highest, as in 1929 (Table 12) in the urban districts of the North.

Congenital debility and convulsions, on the other hand, are seen from Table 9 to be rapidly losing their old numerical importance, the rate for each in 1929 being only about 40 per cent. of that ten years earlier.

It may be presumed that much of this decline is due in each case to transfer to other forms of certification. Both convulsions and congenital debility are comparatively rare forms of return in London, where the convulsions rate is consistently less than half that for England and Wales, while in Wales it is regularly in excess. The London rate for congenital debility in 1929 was 68 per cent. of average, and this fairly represents the experience of other recent years. The county boroughs rate, on the other hand, is consistently somewhat above average, in consequence of Northern excess. In the county boroughs, indeed, this mortality decreases with much regularity year after year from North to South, the other great towns of the South thus falling into line with London as leaders in the increase of definiteness in form of certification.

Mortality at Ages over One Year.

Table XVII states the crude and standardized death-rates at all ages for sexes and persons for the whole country, as well as the mortality per million living at different ages, for 1928 and 1929, and, in order to provide means of comparison with the most recent pre-war experience, for 1911–14.

At every age distinguished in Table XVII mortality was higher in 1929 than in 1928, to the extent shown for each sex in Table I, but at each age under 65 for males and females it still remained lower than before the war.

Although the adverse conditions of 1929 have decreased the reduction of the year's mortality below the 1911–14 rate from 26·3 per cent. in 1928 to 14·9 (English standard), the usual analysis of this reduction by sex and age is continued in Table XVIII, which thus affords a comparison between recent experience under bad conditions and the most favourable pre-war rates.

Table XVII.—England and Wales: Mortality from all Causes per Million Population, 1911–14, 1928, and 1929. (Total deaths registered.)

	Males.			Females.			Persons.		
	1911–14.	1928.	1929.	1911–14.	1928.	1929.	1911–14.	192 .	1929.
All Ages :									
Crude	14,890	12,465	14,229	13,065	10,922	12,724	13,948	11,661	13,444
Standardized { A	14,841	11,104	12,714	12,260	8,900	10,372	13,475	9,931	11,472
{ B	15,911	12,079	13,799	13,713	10,234	11,959	14,779	11,120	12,843
0–..	40,588	21,943	26,281	33,917	17,359	21,589	37,270	19,675	23,961
5–..	3,304	2,419	2,600	3,255	2,236	2,319	3,279	2,329	2,461
10–..	1,972	1,685	1,745	2,055	1,537	1,672	2,014	1,611	1,709
15–..	2,942	2,589	2,661	2,683	2,376	2,531	2,811	2,483	2,596
20–..	3,721	3,129	3,364	3,200	2,975	3,106	3,450	3,051	3,235
25–..	4,912	3,672	3,918	4,057	3,262	3,468	4,464	3,452	3,678
35–..	8,033	6,006	6,762	6,437	4,572	4,885	7,205	5,227	5,741
45–..	14,808	11,247	12,922	11,363	8,131	8,960	13,018	9,593	10,808
55–..	29,767	23,292	25,863	22,471	17,084	19,255	25,905	20,028	22,389
65–..	62,844	57,837	65,701	50,722	44,289	51,993	56,124	50,383	58,164
75–..	135,490	130,050	154,203	114,126	105,980	131,374	122,694	115,560	140,498
85 and upwards	271,337	287,713	335,678	237,360	262,525	327,227	249,201	270,931	330,061

A. English Standard (Population of England and Wales, 1901). B. International Standard. (*See* pages 1 and 2.)

The type of distribution by age of the fall since 1911–14 has been little affected by the severe conditions of the year, and remains substantially the same as pointed out for previous years and exemplified by the figures for 1928 in Table XVIII. The fall is much greater at 0–5 than at any higher age, amounting in 1929 to about 35 per cent. for males and 36 for females.

Thereafter it very rapidly decreases with advancing age up to early maturity, reaching a minimum of 10 per cent. for males at 15–20 and of 3 per cent. for females at 20–25.

Table XVIII.—England and Wales: Mortality at various ages from all causes in 1928 and 1929 per cent. of that for the same sex and age in 1911–14.

	Males.		Females.		Both Sexes.	
	1928.	1929.	1928.	1929.	1928.	1929.
All Ages :						
Crude	83·7	95·6	83·6	97·4	83·6	96·4
Standardized { A ..	74·8	85·7	72·6	84·6	73·7	85·1
{ B ..	75·9	86·7	74·6	87·2	75·2	86·9
0—	54	65	51	64	53	64
5—	73	79	69	71	71	75
10—	85	88	75	81	80	85
15—	88	90	89	94	88	92
20—	84	90	93	97	88	94
25—	75	80	80	85	77	82
35—	75	84	71	76	73	80
45—	76	87	72	79	74	83
55—	78	87	76	86	77	86
65—	92	105	87	103	90	104
75—	96	114	93	115	94	115
85—	106	124	111	138	109	132

After this age another period of increasing decline sets in, which reaches its maximum of 20 per cent. for males at 25–35 and of 24 per cent. for females at 35–45. Thereafter the decrease recorded becomes progressively less for each sex, till at ages over 65 it disappears altogether. The relative smallness of the decline for females at 20–25 is mainly due to tuberculosis. At this age tuberculosis mortality has declined by 19 per cent. for males and increased by 6 per cent. for females, whereas mortality from other causes has decreased by 3 per cent. for males and 10 per cent. for females. Even from causes other than tubercle however the decline in youth (10–25) is less than in middle age or in childhood.

The similarity of this age distribution of recent decline in mortality to that of the 1929 increase (over 1928) as shown in Table I will be noted, and suggests a common cause for each. Susceptibility of mortality to environmental conditions varying in degree of urbanization, appears to be greatest at 0–5 (*see* Diagram 1, Review for 1922), and thereafter rapidly to decrease till about 20–30, after which it increases again as age further advances, though in extreme old age the preponderant influence of the natural tendency to death masks environmental influence, approximating the mortality of all environments to a common high level.

This age variation of susceptibility to environment evidently harmonizes with the age distribution of the mortality increases in Tables I and XVIII. The effect of the severe winter of 1929 (Table I) was greatest at 0–5, and thereafter decreased till adolescence, after which it progressively increased as age further advanced ; and the age distribution of the reduction of mortality caused by improvement of conditions since 1911–14 (Table XVIII) is of very much the same type. Variation with age of susceptibility to environmental influence thus affords a common explanation of the features of Tables I and XVIII and of Diagram 1, 1922, and so may perhaps be regarded as responsible for them.

Mortality at age 0–5 (Table XVII) is very imperfectly measured during recent years by the crude rate for all these ages jointly. When the birth-rate is falling fast, as during the war and since 1920, the proportion to the whole group aged 0–5 of infants under one year of age is abnormally low, and the crude death-rate of the group tends to fall merely because of the small effect of the high mortality of these infants in consequence of their small numbers. When the birth-rate rises, the opposite effect is produced, and allowance by standardization for these changes in the composition of the population at risk increases the death-rate in the first case, and reduces it in the second.

Table XIX measures the effect of this influence of changes in the birth-rate upon the mortality of early life immediately before the war and from 1917 onwards. It shows that in all these

years the fall of the birth-rate has caused some under-statement of mortality at 0–5 for each sex except during the three years 1920–22, when its temporary rise after the war reversed the process. The fall of 36 per cent. shown for this mortality in Table XVIII is seen to be slightly overstated from this cause, being reduced to 33 per cent. when allowance is made for its influence. But this influence, which was greatest during the years 1918–21, when its effect upon the crude rate varied from a reduction of 11 per cent. to an increase of 12 per cent., has become of less importance as the birth-rate has become more stable of late years, its effect in 1929 being to increase crude mortality by 5 per cent., and in each of the three preceding years by 6 per cent. The crude rate, accordingly, as recorded in Table 3, now again provides a measure of the movement of this mortality sufficiently accurate for practical purposes. It shows that recent rates are quite without parallel in the past, no quinquennium before 1906–10 returning less than double the rate for 1929.

Table XIX.—England and Wales: Comparison of Crude and Standardized Death-Rates per 1,000 living at Age 0–5, 1911–14 and 1917–29.

		Males.		Females.		Both Sexes.	
—		Crude.	Stand-ardized.	Crude.	Stand-ardized.	Crude.	Stand-ardized.
1911–14	..	40·6	40·8	33·9	34·2	37·3	37·5
1917 ..	..	31·8	34·3	26·3	28·4	29·1	31·4
1918 ..	..	38·9	43·1	34·1	37·5	36·5	40·3
1919 ..	..	32·8	36·6	26·4	29·5	29·6	33·1
1920 ..	..	36·2	31·8	28·8	26·0	32·5	29·0
1921 ..	..	32·3	29·2	25·8	23·6	29·1	26·4
1922 ..	..	30·2	28·5	24·5	23·1	27·4	25·8
1923 ..	..	24·3	25·0	19·6	20·1	22·0	22·5
1924 ..	..	25·1	27·3	20·2	21·8	22·6	24·6
1925 ..	..	25·3	27·1	20·7	22·1	23·0	24·6
1926 ..	..	23·3	24·9	18·8	20·0	21·1	22·4
1927 ..	..	23·7	25·2	18·9	20·0	21·3	22·6
1928 ..	..	21·9	23·3	17·4	18·5	19·7	20·9
1929 ..	..	26·3	27·7	21·6	22·7	24·0	25·2

Mortality at 1–5.—The causes of the great decline in mortality at 0–5 recorded in Table 3 have been for the most part already dealt with, as 64 per cent. of deaths under 5 in 1929 occurred in the first year of life. But, as shown by Table XX, mortality is falling almost as rapidly of late in the years immediately following infancy as in the first year of life itself, so the features of the changes in progress at these ages also seem to call for some consideration.

Until 1929, indeed, the fall of mortality in recent years has generally been greater in the years of life immediately succeeding infancy than in the first year itself, but this is no longer the case, each year of age 1–5 now showing less reduction than 0–1 in Table XX. This is because the severe conditions of 1929 increased mortality more in the second to the fifth years of life than in the first, the increase being greatest of all at 1–2, which was shown in the Review for 1923 (page 26) to be the age of maximum susceptibility to environment.

Table XX.—England and Wales.—Mortality per 1,000 living (both sexes) in each of the first Five Years of Life, 1911–14, 1928, and 1929.

Year of Life.	1911–14.	1928.	1929.	1929 per cent. of	
				1911–14.	1928.
0–1	118·16	69·03	77·83	65·9	112·7
1–2	34·06	16·19	23·55	69·1	145·5
2–3	13·68	7·15	10·04	73·4	140·4
3–4	8·32	4·39	5·73	68·9	130·5
4–5	6·14	3·50	4·16	67·8	118·9
0–5 { Crude ..	37·27	19·68	23·96	64·3	121·7
0–5 { Stand ..	37·52	20·91	25·19	67·1	120·5
1–5 { Crude ..	15·62	7·72	10·68	68·4	138·3
1–5 { Stand ..	15·54	7·80	10·86	69·9	139·2

The distribution throughout the country of mortality at these ages is shown in Table XXI, which may be compared with Tables V and VI (Infant Mortality). The greatest excess over the general average recorded in Table XXI is one of 65 per cent. for the county boroughs of the North at 1–2 years, while the most favourable position occupied by any of the populations compared is that of 56 per cent. below the general average by the rural districts of the South at the same age.

The differences in mortality between the populations compared are greater at 1–2 than at 2–5 years, and greater at the latter age than in the first year of life (Tables XXI and VI).

As Table XXIV of the Review for 1926, and similar tables for other years, show that mortality varies more with environment at 0–5 than at any later age, it follows from Table XXI that environmental influence is at a maximum, as usual, in the second year of life.

Table XXI.—Distribution of Mortality in Early Childhood, 1929.

	1—2 years.					2—5 years. (Mean Annual Mortality.)				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
Deaths per 1,000 Living (Both Sexes).										
London	—	—	24·63	—	24·63	—	—	5·68	—	5·68
County Boroughs	38·78	26·64	15·38	27·72	32·05	9·66	7·26	4·96	7·61	8·33
Other Urban Districts	27·71	17·51	12·82	20·47	20·16	7·98	5·52	4·30	6·50	6·20
Rural Districts	22·10	12·51	10·36	13·66	14·37	6·62	4·51	3·55	4·72	4·81
All Areas	32·89	19·26	17·73	19·93	23·55	8·69	5·86	4·85	6·21	6·60
Mortality per cent. of that in England and Wales.										
London	—	—	105	—	105	—	—	86	—	86
County Boroughs	165	113	65	118	136	146	110	75	115	126
Other Urban Districts	118	74	54	87	86	121	84	65	98	94
Rural Districts	94	53	44	58	61	100	68	54	72	73
All Areas	140	82	75	85	100	132	89	73	94	100
Mortality per cent. of that in England and Wales in the same class of Area.										
County Boroughs	121	83	48	86	100	116	87	60	91	100
Other Urban Districts	137	87	64	102	100	129	89	69	105	100
Rural Districts	154	87	72	95	100	138	94	74	98	100

The effect of this in bringing about maximum reduction of mortality at age 1–2 in years of favourable conditions has been pointed out in previous Reviews, and the maximum increase at this age under the severe conditions of 1929 on page 23. It is reasonable that the most susceptible age should show most loss when conditions become worse as well as most gain when they improve, and thus the extreme meteorological contrast between 1928 and 1929 may be regarded as a natural experiment confirming the inference drawn from the contemporaneous sectional population contrasts of Table XXI just as it has also provided an explanation for the age distribution of mortality reduction in Table XVIII by its resemblance to that of increase in Table I.

At both 1–2 and 2–5 years the general type of mortality distribution is the same as that persistently maintained for infant mortality, and illustrated by Tables V and VI. No exception to the rule of decrease from North to South occurs for any class of area at either age dealt with.

The lower section of the table shows that the Northern excess, both at 1–2 and at 2–5, was highest in the rural districts. In each of the last eight years, 1922–29, for which the facts have been tabulated in this form, the same regular gradation of the Northern excess at 1–2 as shown for 1929 in Table XXI, from a rural maximum to a county borough minimum, has been met with, so the special danger to child life at this age of Northern rural environment seems well established. The advantage of the South, on the other hand, was greatest in the county boroughs and least in the rural districts at 1–2 years.

The chief causes of death at ages 1–5 are set forth in Table XXII, which also provides comparison with 1928 and with 1911–14.

This table shows the causes through which the sudden severity of weather conditions in 1929 operated in increasing mortality at these susceptible (page 23) ages from 7,717 per million in 1928 to 10,677, or by 38 per cent. These are, as might be expected, mainly respiratory, influenza furnishing the largest increase of all (416 per cent.), and, next to it, whooping cough, broncho-pneumonia, pneumonia (lobar and undefined), and bronchitis. Together these five causes account for almost the whole (99·4 per cent.) of the year's increase.

Table XXII.—England and Wales : Deaths from Various Causes per Million living at Ages 1–5 Years in 1911–14, 1928, and 1929.   (Both Sexes.)

Cause of Death.	Death-rate.			Cause of Death.	Death-rate.		
	1911–14.	1928.	1929.		1911–14.	1928.	1929.
7. Measles ..	2,673	1,122	965	98:2. Laryngitis ..	152	43	39
8. Scarlet Fever ..	373	92	102	99. Bronchitis ..	872	300	415
9. Whooping Cough	1,216	572	1,411	100. Broncho - pneumonia	2,170	1,533	2,889
10. Diphtheria	781	504	533	101. Pneumonia (Lobar and not otherwise defined).	866	417	636
11. Influenza	60	96	495	Other Respiratory Diseases	140	73	82
31. Tuberculosis of Respiratory System.	237	117	134	112 : 1 Inflammation of the Stomach.	94	33	24
32. Tuberculosis of Nervous System.	705	378	406	113 & 114. Diarrhœa and Enteritis.	1,639	368	419
33. Tuberculosis of Intestines and Peritoneum.	391	127	111	128. Acute Nephritis ..	89	41	38
34–37. Other Tuberculous Diseases.	288	134	143	159. Congenital Malformations.	85	75	85
56. Rickets ..	172	102	89	179. Burns and Scalds ..	360	234	247
71. Meningitis ..	451	120	138	Other Violence ..	274	284	271
80. Convulsions ..	460	99	117	Other Causes ..	1,071	855	889
				All Causes ..	15,619	7,717	10,677

Among the greatest decreases of mortality since 1911–14, on the other hand, have been those from certain forms of return now rapidly passing out of use, convulsions, laryngitis, inflammation of the stomach and meningitis heading the list. Diarrhœa, scarlet fever (with acute nephritis) and all forms of tuberculosis are also falling fast, but diphtheria and whooping cough retain their importance, and influenza was, of course, many times more fatal in 1929 than in 1911–14, so the chief risk at these ages remains that from the acute specific infections, which accounted for 33 per cent. of the total mortality both in 1929 and in 1911–14.

Mortality of the Aged.—The rapid increase of late years in the relative importance of this section of the population forms an outstanding feature of our vital statistics at the present time. Persons over 70 years of age were 297 per 10,000 total population in 1911, 344 in 1921, and in 1929 are estimated at 389 per 10,000 (Table LXX). That table indicates an increase, since 1921, of 4 per cent. at ages under 70, whereas the increase for ages over 70 is 18 per cent.

Table XXIII.—England and Wales: Mortality over 70 Years of Age in 1911-20, 1921-25, 1927, 1928, and 1929, from the Chief Causes of Death.

	Deaths from each Cause per 1,000 Total Deaths.					Mortality per 1,000 Living.				
	1911–20.	1921–25.	1927.	1928.	1929.	1911–20.	1921–25.	1927.	1928.	1929.
MALES.										
Influenza (11)..	20	25	41	12	49	2·3	2·7	4·7	1·3	6·2
Cancer (43–49)	81	101	107	116	103	9·4	11·0	12·3	12·5	12·9
Heart Diseases (87–90)	149	169	201	229	261	17·2	18·4	23·1	24·6	32·7
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	147	184	194	211	165	16·9	20·1	22·4	22·8	20·6
Bronchitis (99)	137	127	111	82	96	15·9	13·9	12·8	8·9	12·1
Pneumonia (100, 101)	34	35	36	32	39	4·0	3·9	4·2	3·5	4·9
Chronic Nephritis (129)	29	27	28	33	32	3·3	2·9	3·2	3·6	4·0
Old Age (164)	223	168	122	111	100	25·7	18·3	14·1	11·9	12·6
Other Causes ..	180	164	160	174	155	20·8	17·9	18·3	18·7	19·5
All Causes ..	1,000	1,000	1,000	1,000	1,000	115·5	109·2	115·1	107·7	125·6
FEMALES.										
Influenza (11)	24	30	50	14	63	2·3	2·8	5·0	1·3	7·1
Cancer (43–49)	87	100	102	115	98	8·7	9·6	10·3	10·7	11·1
Heart Diseases (87–90)	154	186	222	256	275	15·2	17·8	22·4	23·7	31·0
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	139	167	177	193	150	13·7	16·0	17·8	17·9	16·9
Bronchitis (99)	149	137	119	86	109	14·8	13·1	12·0	7·9	12·3
Pneumonia (100, 101)	32	35	34	30	39	3·2	3·3	3·5	2·8	4·4
Chronic Nephritis (129)	21	20	23	27	24	2·1	1·9	2·3	2·5	2·7
Old Age (164)..	249	194	148	136	121	24·6	18·5	14·9	12·6	13·6
Other Causes ..	145	131	125	143	121	14·4	12·5	12·7	13·2	13·7
All Causes ..	1,000	1,000	1,000	1,000	1,000	99·0	95·7	100·8	92·6	112·6
PERSONS.										
Influenza (11)	22	27	46	13	57	2·3	2·8	4·9	1·3	6·7
Cancer (43–49)	85	100	104	116	100	9·0	10·2	11·1	11·4	11·8
Heart Diseases (87–90)	152	179	212	243	269	16·0	18·1	22·7	24·1	31·7
Disease of Blood Vessels, including Cerebral Hæmorrhage (74, 91–93)	142	175	184	201	156	15·1	17·7	19·7	19·9	18·4
Bronchitis (99)	144	133	116	84	103	15·2	13·4	12·3	8·3	12·2
Pneumonia (100, 101)	33	35	35	31	39	3·5	3·5	3·8	3·1	4·6
Chronic Nephritis (129)	24	23	25	30	28	2·6	2·3	2·7	3·0	3·3
Old Age (164)..	237	182	136	125	112	25·0	18·4	14·5	12·3	13·2
Other Causes ..	161	146	142	157	136	17·0	14·7	15·0	15·5	16·1
All Causes ..	1,000	1,000	1,000	1,000	1,000	105·8	101·2	106·7	98·9	118·0

The sudden increase in the mortality of old age in 1929 has been already referred to (page 2). At ages over 70 as a whole it amounted to 19 per cent. The causes assigned to it are set forth in Table XXIII.

The senile death-rate from cancer has steadily increased during the period covered by the table. But it is probable that in the past the cause of many senile deaths from cancer has been overlooked, and some of the rapid recent decrease in deaths assigned merely to old age is probably due to increasing recognition of malignant disease

Though the proportionate increase of over 400 per cent. since 1928 shown for influenza in Table XXIII is much the largest in the table, every other cause distinguished, except diseases of the blood vessels, also contributes to the total increase, so it appears that the severity of the season must share responsibility with the outbreak of influenza.

One of the largest increases since 1928 shown in the table is that of 7·6 (deaths per 1,000 living) from heart disease, which of late shows progressive increase in the proportion of senile deaths attributed to it. But, besides the special influence in 1929 of influenza, this change is largely attributable to the increasing vogue in certification of myocardial degeneration (page 72).

Centenarians.—Among the deaths registered during the year there were 98 of reputed centenarians, 25 of whom were males and 73 females. In the preceding three years the numbers were 88, 84 and 84 respectively. Particulars of the ages returned and of the classes of area concerned are given in Table XXIV.

Table XXIV.—England and Wales : Age at Death of Centenarians, 1929.

	Males.									Females.								
	100 and over	100	101	102	103	104	105	106	107	100 and over	100	101	102	103	104	105	106	107
London	5	4	—	1	—	—	—	—	—	13	5	4	2	—	1	1	—	—
County Boroughs	3	1	—	1	—	—	—	—	1	14	4	6	2	—	1	—	—	1
Other Urban Districts	5	1	2	—	2	—	—	—	—	27	15	5	5	1	—	1	—	—
Rural Districts ..	12	5	3	—	1	—	3	—	—	19	6	3	8	1	1	—	—	—
All Areas ..	25	11	5	2	3	—	3	—	1	73	30	18	17	2	3	2	—	1

CAUSES OF DEATH.

The causes of death of males and females at 18 groups of ages are stated in Table 17 for the whole country, for London, for county boroughs in the aggregate, for other urban districts in the aggregate, and for rural districts in the aggregate; and in Table 17A further detail of age is shown for all causes of significance at ages 0–5. In Table 18 deaths from each cause distinguished are tabulated by month of occurrence and by sex, but not by age. This table differs from all others in referring to date of occurrence and not of registration. So far as they relate to the whole country these tables include all deaths, but deaths of non-civilians are excluded from all tables relating to portions of the country (*see* page 1). The causes and ages for non-civilians are stated in Table 19 for the country as a whole. Table 17 includes the full International List of causes of death, as

revised in 1920. Certain of the numbered items in it are subdivided, and where this occurs the letters (*a*), (*b*), &c., indicate subdivisions in international use, and numbers (1), (2), &c., subdivisions made without international agreement. All other abstracts of the causes of death are arranged in the form of the short list of causes adopted by the Registrar-General in consultation with the Ministry of Health for use during 1921–30. The relation of this list to the detailed and condensed International Lists, as revised by the International Commission which met for the purpose at Paris in 1920, is as follows :—

	Short List of Registrar-General.	Corresponding Number.	
		Detailed International List.	Abridged International List.
1	Enteric fever	1	1
2	Small-pox	6	4
3	Measles	7	5
4	Scarlet fever	8	6
5	Whooping cough	9	7
6	Diphtheria	10	8
7	Influenza	11	9
8	Encephalitis lethargica	23	12 pt.
9	Meningococcal meningitis	24	12 pt.
10	Tuberculosis of respiratory system	31	13
11	Other tuberculous diseases	32–37	14 & 15
12	Cancer, malignant disease	43–49	16
13	Rheumatic fever	51	37 pt.
14	Diabetes	57	37 pt.
15	Cerebral hæmorrhage, &c.	74 & 75*a*	{ 18 pt. / 37 pt.
16	Heart disease	87–90	19
17	Arterio-sclerosis	91*b*	37 pt.
18	Bronchitis	99	20 & 21
19	Pneumonia (all forms)	100 & 101	22 & 23 pt.
20	Other respiratory diseases	{ 97, 98 & 102–107 }	23 pt.
21	Ulcer of stomach or duodenum	111	24 pt.
22	Diarrhœa, &c. (under 2 years)	113	25
23	Appendicitis and typhlitis	117	26
24	Cirrhosis of liver	122	28
25	Acute and chronic nephritis	128 & 129	29
26	Puerperal sepsis	146	31
27	Other accidents and diseases of pregnancy and parturition	{ 143–145 & 147–150 }	32
28	Congenital debility and malformation, premature birth	} 159–161	33
29	Suicide	165–174	36
30	Other deaths from violence	175–203	35
31	Other defined diseases	{ 2–5, 12–22, 25–30, 38–42, 50, 52–56, 58–73, 75*b*–86, 91*a*, 91*c*–96, 108–110, 112, 114–116, 118–121, 123–127, 130–142, 151–158, 162–164 }	{ 2, 3, 10, 11, 12 pt., 17, 18 pt., 24 pt., 25 bis, 27, 30, 34, & 37 pt. }
32	Causes ill-defined or unknown	204 & 205	38

The contents of every heading in both the short and the detailed list now in use are defined in the Registrar-General's " Manual of the International List of Causes of Death " (1920 Revision),* which should be consulted in all cases where it is desired to ascertain the precise significance of any heading in the lists.

In Table 20 deaths of civilians are shown for different classes of area in various sections of the country, for urban and rural portions of administrative counties, and for county and metropolitan boroughs, arranged by sex, age, and the short list of causes as above. For other administrative areas of over 10,000 population in 1921 deaths of civilians are shown in Table 21, arranged by sex and short list of causes, but without distinction of age.

In addition to the above tables, which relate exclusively to the year 1929 (except Table 18, which deals with the twelve months Oct. 1928–Sept. 1929), Table 4 contains a statement of the number of deaths registered in each year 1919–29 from each cause distinguished in Table 17, so far as available, with distinction of sex but not of age ; while Table 5 states the corresponding crude death-rates per million living for persons, males, and females, so far as these can be regarded as of any significance; no rates being shown for causes which give a rate of less than five per million to population. But the crude rates in Table 5 are liable to be misleading as indices of the progress of mortality even where their numerical basis is adequate. Owing to the rapid ageing of the population at the present time as a result of simultaneous fall in birth and death-rates the rates shown in Table 5 for causes mainly affecting old people tend automatically to increase, and thus to overstate mortality from such causes as cancer, cerebral hæmorrhage, and heart disease. As this overstatement had become seriously misleading in many cases, Table 5A has now been inserted to correct it by showing the course of mortality from each cause dealt with when allowance is made for such population changes by standardization (page 1). Owing to the clerical labour involved in the preparation of these rates the list of causes in Table 5A is much shorter than that in Table 5, and rates are shown only for males and females separately, and not for both sexes jointly. Tables Nos. 8 and 9 state the mortality during the eleven years 1919–29 of infants under one year of age from the causes of chief importance at that age, but without distinction of sex.

1. Enteric Fever.—The number of deaths classified to this heading during 1929 was 382. Of these, 55, or 14 per cent., were ascribed to paratyphoid infection, as against 100, or 23 per cent., in 1928, and only 6, or 0·25 per cent., in 1911, the first year for which the information is available.

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* Copies may be obtained from H.M. Stationery Office. Price 2s. net.

The standardized rate (Table 6) corresponding to these deaths, 9 per million persons living (as also for each sex, Table 5A) is the lowest yet recorded, though the same level was reached in 1926 and 1927.

Table 6 shows that this rate is quite trifling compared with those of earlier years, the rate for 1871–75, for instance, having been 371 per million, or over 40 times that for 1929.

The history of this remarkable fall is recorded in Table 6, with allowance by standardization for changes in the type of population at different periods, but mortality from this cause is little affected by standardization, the crude rate (Table 5), for each year from 1920 on, being almost the same as the standardized (Table 6). The rate remained almost stationary at about twenty times the present figure during the last decade of last century, when diarrhœal mortality was also heavy (Table III), then fell from 198 in 1899 to 15 in 1919, and then, after a further pause, from 13 in 1924 to 9 in 1929.

The distribution of this mortality throughout the country is outlined in Table XXV.

Table XXV.—Enteric Fever, 1929 : Mortality per Million Civilian Population.

Class of Area.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	10	—	10
County Boroughs	10	6	9	11	9
Other Urban Districts	16	7	13	6	11
Rural Districts	10	9	5	11	8
All Areas	12	7	10	9	10

The highest rate for 1929, is that for the smaller towns of the North, those of the South coming next. Excess of mortality in the small towns has been the general rule during the last nineteen years, in a large proportion of which, as in 1929, the highest rate of all has been that of the Northern towns. The lowest rate, as in many similar comparisons for other causes of death, is that of the rural districts of the South, but this is by no means a general rule for enteric fever. The London rate, equal to that for England and Wales in 1929 as in 1928, was below it in each year 1911–24, exceeding it only in 1925.

Prevalence (Table 23) and fatality (Table XXVII) were much the same in 1929 as in other recent years, though both have decreased greatly from the levels of 20 years ago. Their distribution throughout the various sections of the population in 1929 is shown in Table XXVI.

Table XXVI.—Enteric Fever, 1929 : Prevalence and Fatality.*

Class of Area.	Cases per 1,000,000 Population.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	86	—	86	—	—	119	—	119
County Boroughs	69	39	86	62	61	147	157	104	171	143
Other Urban Districts ..	105	60	85	34	77	156	114	148	182	143
Rural Districts	89	69	78	48	74	113	135	62	225	115
All Areas	84	55	84	44	72	146	131	115	193	134

* Excluding non-civilian cases and deaths but including cases in Port Sanitary Districts.

Both prevalence and fatality were on a very similar scale for all sections in 1929, excess of prevalence in the South and of fatality in the North being much less clearly manifested than usual. The proportion of paratyphoid to total notifications was also very similar throughout the country, varying, for England, only from 20·6 per cent. in the North to 23·6 in the Midlands. It was less in Wales—12·6.

Table XXVII.—England and Wales : Fatality of certain Infectious Diseases (Deaths per 1,000 Notified Cases), 1911–29.†

Year.	1. Enteric Fever.	6. Small-pox.	8. Scarlet Fever.	10. Diphtheria.	21. Erysipelas.	22. Poliomyelitis.	23. Encephalitis Lethargica.	24. Meningococcal Meningitis.
1911 ..	174	78·0	18·1	103	39	?	?	?
1912 ..	191	73·2	18·6	96	39	?	?	?
1913 ..	182	87·0	16·1	88	35	283	?	1,089
1914 ..	194	61·5	17·2	99	42	348	?	1,257
1915 ..	199	141·3	18·6	107	46	331	?	630
1916 ..	174	113·2	17·8	101	39	270	?	656
1917 ..	205	333·3	15·3	100	43	469	?	663
1918 ..	201	30·8	20·5	106	47	1,004	?	673
1919 ..	147	77·6	14·7	90	42	297	533	727
1920 ..	171	114·1	12·0	81	52	404	539	911
1921 ..	158	15·9	9·5	72	55	314	493	1,007
1922 ..	191	27·7	12·7	78	53	352	742	1,047
1923 ..	140	2·8	11.6	68	50	185	517	934
1924 ..	120	3·5	10·5	60	52	183	279	746
1925 ..	139	1·7	10·8	58	57	370	520	876
1926 ..	133	1·8	8·3	59	55	181	583	926
1927 ..	103	3·2	6·8	52	56	203	713	911
1928 ..	124	4·3	5·7	52	55	306	819	1,061
1929 ..	133	3·6	6·0	55	58	263	999	882

† The rates in this table are given with reserve, being in some respects unsatisfactory. For the years 1911–13 cases of disease among non-civilians have been excluded from the notification returns, but it has not been possible to distinguish their deaths; for the years 1920–1925 inclusive both cases and deaths relate to civilians only; for all other years the figures relate to the total population.

The numbers of small-pox cases in some years are too small to yield significant rates, but their basis of fact can be inferred from Table 4, and the rates quoted serve to bring out the extremely mild type of disease prevalent in 1921–29. The rates for poliomyelitis include polioencephalitis, which was not distinguished in the notification returns until 1919. The extraordinary rise in 1918 is partly ascribable to certification of a number of deaths from the then "new disease," encephalitis lethargica, as polioencephalitis, but mainly to a reduction in notifications unaccompanied by significant change in the number of deaths (see Report for 1918). The rates from this disease will be found to differ from some of those published in the Annual Reports of the Chief Medical Officer of the Ministry of Health, partly because polioencephalitis is included throughout and partly because special inquiries made by the Ministry in certain years have led to revision of the returns for those years, which is not embodied in Table XXVII. The cases there referred to are similar for each year dealt with, being in all cases derived from the published notification returns. The latter source of discrepancy applies also to meningococcal meningitis, and in this case there is a possibility that some cases of posterior basal meningitis may not have been notified as cerebro-spinal fever though all such deaths are included in the table.

Enteric fever is fatal chiefly in the prime of life. In 1929 the death-rate for males was highest at 25-35, and for females at 55-65. For each sex the age of highest mortality varies a good deal in different years, generally occurring between 15 and 45.

The highest mortality rates recorded in Table 7 are, for counties of over 100,000 population, 46 per million in Northumberland and 23 in Northamptonshire. The county boroughs with highest rates are West Hartlepool (115), Tynemouth (46), Gloucester (38), and Doncaster (33).

6. **Small-pox.**—The deaths allocated to this cause numbered 39, somewhat fewer than in 1927 or 1928, but more than in any of the other recent years included in Table 4. The mortality record for this disease is contained in Table 6, which shows that the standardized rate for 1929 was only 1 per million, as in nine other years since the 1901–05 epidemic. In the remaining fourteen of these years the rate has been less than 0·5 per million, as indicated by 0 in the table.

The type of disease prevalent in 1929 remained mild to a degree unprecedented in the official records before 1923, when the fatality rate suddenly fell from 27·7 to 2·8 per 1,000 cases. Since 1923 the rate has shown but slight fluctuations, reaching 4·3 in 1928 ; the rate in 1929 was 3·6 per 1,000 notified cases (Table XXVII).

The counties (with county boroughs) returning highest rates of prevalence, with the rates per 1,000 population in each case, are seen from Table 28 to have been—Soke of Peterborough, 4·94 ; Northamptonshire, 1·64 ; Monmouthshire, 1·15 ; Derbyshire, 1·01 ; Leicestershire, 0·99 ; Huntingdonshire, 0·93 ; Essex, 0·82 ; and Durham, 0·54.

7. **Measles.**—The deaths registered from this cause numbered 3,388, corresponding to a mortality of 86 per million population. But allowance for decreased proportion of children in the present population increases the rate on standardization from 92 to 125 for males and from 80 to 121 for females. The death-rate for children under 15 years of age, 346 per million, is seen from Table 6 to have been higher than in 1919, 1921, and 1926, but lower than in all recent years other than these. During last century this rate was on an altogether higher level. It was several times that for 1929, which was first approached during 1916-20.

The distribution throughout the country of mortality from measles is stated in Table XXVIII in the form of death-rates per 100,000 living at ages 0–5. Deaths at these ages in 1929 formed 90 per cent. of the total, and statement in this form prevents the comparison being prejudiced by varying proportions of children in the populations compared.

Table XXVIII.—Measles, 1929 : Mortality per 100,000 Living at Ages under 5 Years.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	56	—	56
County Boroughs ..	229	143	17	292	183
Other Urban Districts	104	30	27	93	60
Rural Districts ..	104	28	15	24	43
All Areas	172	68	36	115	99

This table demonstrates, as usual, to what an extent measles mortality is promoted by city life. The increase shown for 1929 from rural districts to small towns, and from these to county boroughs, is common to the experience of each of the 19 years, 1911–29, for which the facts are available. It has applied to the North of England in each of the 19 years, with two exceptions, of which 1929 forms the second, and to the Midlands in each of these years except 1921. For the South Table XXVIII furnishes the seventh exception. The rule of increase from South to North is also of very general application, holding good for each class of area in 1929 as well as in 11 of the 18 previous years.

The increase of mortality from rural districts to large towns in 1929 was as usual accompanied, and presumably largely explained, by a higher average age at death in the former than in the latter. The proportion of total deaths occurring at ages over two years was as follows in each of the classes of area compared in Table XXVIII; rural districts 52 per cent., urban districts 45, county boroughs 38, and London 33 per cent. In the total population the proportion was 40 per cent. The effect of sparseness of population in delaying infection by measles is evident from these figures, for though there are no national records of the ages of children attacked, it may be assumed with confidence that where attacks occur earliest in life the proportion of deaths during the first two years will be greatest. As the differential fatality of measles for young children is well known, the lower mortality of the rural districts must be largely explained by later infection.

Table 7 shows that, of administrative counties with over 100,000 population, Durham returned the highest death-rate, 232 per million, Yorkshire, North Riding, 110, and Monmouthshire, 108, coming next. The highest county borough rates were— Sunderland, 821, West Bromwich, 544, Cardiff, 504, and Liverpool, 497.

The London rate, nearly three times that for England and Wales in 1928, was little more than half the average in 1929.

8. **Scarlet Fever.**—Mortality from this cause remained low in 1929. Table 6 shows that for the fourth year in succession the year's mortality was lower than any recorded prior to 1926.

The same table also shows that for fourteen years in succession this rate has been much lower than any recorded previous to this period (*i.e.*, to 1916), the mortality being now trifling compared with that prevalent a generation ago.

The progress of the decline from the maximum decennial rate of 1861–70 (Table 6) may be traced in the following statement of proportionate figures for subsequent periods, taking the rate of 2,617 in that decade as 1,000—1871–80, 729 ; 1881–90, 345 ; 1891–1900, 168 ; 1901–10, 119 ; 1911–20, 54 ; 1921–25, 35 ; 1926, 22 ; 1928, 19, and 1929, 22. Thus the mortality of 1929 was only about 2 per cent. of that experienced 60 years earlier.

Table XXVII shows that the decrease in fatality of cases of this disease, which has been observed for many years, was replaced in 1929 by a slight increase, from 5·7 to 6·0 deaths per 1,000 cases notified. But this rate is less than one-third of that at the commencement of the record in 1911, when the notifications were first tabulated, scarlet fever and smallpox showing much the greatest declines of fatality in the table.

Table XXIX.—Scarlet Fever, 1929 : Mortality per Million Living at Ages under 15 years.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	55	—	55
County Boroughs	89	27	54	27	63
Other Urban Districts	84	42	42	39	55
Rural Districts	56	59	44	23	51
All Areas	83	41	49	32	57

The distribution of mortality recorded in Table XXIX follows the general type which has been noted for the last 19 years. Mortality tends to increase with urbanization for England and Wales generally, and from South to North in each class of area. The second of these rules, which is of less constant application than the first, does not apply completely to any class of area in 1929, but during 1911–29 it has been broken only seven times for the county boroughs, four times for the urban, and six times for the rural districts. Increase, for the country as a whole, with urbanization, from rural districts to county boroughs, has occurred in each of the 19 years except 1918 and 1926.

Table XXX.—Scarlet Fever, 1929 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	151	—	151	—	—	5	—	5
County Boroughs	168	111	104	65	139	7	3	7	5	6
Other Urban Districts	137	118	110	64	117	8	5	6	6	6
Rural Districts	111	99	89	57	95	7	8	6	7	7
All Areas	150	111	123	62	124	7	5	5	6	6

Table XXX shows that, as has usually been the case in recent years, prevalence was almost at a maximum in London. It was highest of all in the county boroughs of the North, and lowest in the rural districts of Wales. Fatality, on the other hand, was, as in each of the four previous years, slightly below average in London, and, as in the three previous years, slightly above average in the rural districts. But the comparative equality of the rate in all classes of area suggests a more or less uniform standard of diagnosis throughout the country.

Broadly speaking, about half the deaths from scarlet fever are of young children under 5 years of age. In 1929 this proportion, 39·6 per cent., was lower than in any previous year since the record of age at death started in 1848. During last century it was much higher than of late years, varying from 60·1 (1893) to 68·3 (1895). For 1901–05 and the four succeeding quinquennia it has stood as follows :—60·6, 58·4, 54·0, 48·4, and 48·6. In 1927 it was 43·5, and in 1928, 43·4. The progressive reduction to 39·6 in 1929 is probably related to the remarkable fall of mortality recorded in Table 6, later incidence involving greater prospect of recovery. (It was shown in the Report for 1886 that fatality is at its maximum in infancy, and falls rapidly with increase of age, being very much less over than under the age of five.)

Table XXXI.—Scarlet Fever, 1929. Deaths at 0–5 per 1,000 at all Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	467	—	467
County Boroughs	474	366	375	600	451
Urban Districts	417	260	375	571	372
Rural Districts	324	281	259	500	301
All Areas	440	292	398	556	398*

* Based on civilians only.

In Table XXXIV of the Review for 1928 the proportion of deaths at 0–5 was shown to have consistently increased, in the past, from rural districts to county boroughs, generally reaching its maximum in London, and along with this a general tendency to increase from South to North was noted for each class of area.

Table XXXI shows that in these respects 1929 on the whole resembles earlier years.

The juvenile ratio is once more lowest in the rural districts and highest in London, though increase from South to North is less noticeable than in earlier years. But this increase has been seen from Table XXIX to be less a feature of mortality distribution in 1929 than in most earlier years, so the general correspondence between the distribution of the tendency to early death and of mortality, pointed out for earlier years in 1928, holds good also for 1929.

Table 7 shows that, amongst counties with over 100,000 population, mortality was highest in Yorkshire, West Riding (45 deaths per million as compared with an average of 17 for all counties) and Denbighshire (38).

The highest rates amongst the county boroughs (average 20) are those of Burnley (80), Bootle (75), and Leeds (61).

9. **Whooping Cough.**—The deaths allocated to this heading numbered 6,332, 2,787 of males and 3,545 of females. The excess for females is shown by Table 4 to be a constant feature of this disease, and tends to increase with age. For each sex these numbers are more than double those of 1928, mortality at ages 0–15 (Table 6) having increased from 300 per 1,000 in 1928 to 649, the highest rate recorded since 1918, before which date such mortality levels were quite common.

Table XXXII.—Whooping Cough, 1929 : Mortality per 100,000 Living at Ages under 5 Years.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	315	—	315
County Boroughs	257	182	113	182	215
Other Urban Districts	220	170	128	194	181
Rural Districts	151	101	105	156	120
All Areas	231	156	202	180	195

The distribution of mortality from this cause is indicated in Table XXXII.

It will be seen that extra-metropolitan mortality increased regularly with urbanization, as it has done in each year from 1911 onwards, except 1915 and 1919.

But the usual rule of increase of mortality, for each class of area considered separately, from South to North, is broken in 1929 by slight excess for rural districts, of the South over the

Midlands, though the rate for the North remains much the highest. The increase of mortality in 1929 was very general, rates for London being three times and for all other sections of the table about twice as great as in 1928.

Table XXXIII shows that, as usual, the proportion of total deaths occurring in the first year of life declined with increasing urbanization, from rural districts to county boroughs. This rule does not always apply to the comparison between London and the county boroughs, but otherwise the only apparent exception to its application from 1911 onwards is the equality shown for county boroughs and urban districts in 1926. But even in this case the urban district percentage was slightly higher than that of the county boroughs, so during the nineteen years available for this comparison no exception to the rule has occurred. During each of the last ten years except 1921 and 1928, the proportion of early deaths has been higher in Wales than in any of the three sections of England.

Table XXXIII.—Whooping Cough, Age at Death as affected by Urbanization : Deaths under One Year of Age per cent. of those at All Ages in each Year 1920–1929 inclusive.

	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
London	45	43	33	47	38	43	44	41	44	38
County Boroughs	44	47	40	42	41	42	45	40	45	36
Urban Districts	53	53	43	47	46	47	45	44	48	43
Rural Districts	60	59	50	51	49	51	54	49	54	49
All Areas	49	50	41	46	43	45	47	43	47	40

This characteristic and stable difference between urban and rural experience of whooping cough mortality is set forth from another point of view in Table XXXIV.

Table XXXIV.—Mortality from Whooping Cough at various stages of childhood in 1923–1927 and 1929 in different classes of Area.

	Rates per Million living.						Rates per cent. of that for England and Wales.					
	1923–27.			1929.			1923–27.			1929.		
	0–1	1–2	2–5	0–1	1–2	2–5	0–1	1–2	2–5	0–1	1–2	2–5
England and Wales	2,888	1,999	430	4,153	3,435	769	100	100	100	100	100	100
London	2,758	2,068	457	6,439	6,195	1,177	95	103	106	155	180	153
County Boroughs	3,194	2,539	533	4,094	4,002	938	111	127	124	99	117	122
Urban Districts	2,729	1,778	393	4,116	2,975	689	94	89	91	99	87	90
Rural Districts	2,703	1,405	304	3,100	1,762	385	94	70	71	75	51	50

This table shows that, as in 1923-27, the great advantage held by the urban and especially the rural districts over the great towns is largely concentrated on the second year of life, and applies only in minor degree to the first, as was also the case in 1928. The risk of death from whooping cough is much the same in all classes of area during infancy, but becomes considerably less in the country than in the town during and after the second year. This, of course, reduces the total deaths to a special degree in the rural districts. So the infantile deaths, of approximately equal frequency in all classes of area, naturally form a larger proportion of this differentially reduced total in the rural districts than elsewhere, so accounting for the rural excess in proportion of infantile deaths shown in Table XXXIII. Possibly the explanation may be concerned with varying degrees of resistance to infection It has frequently been pointed out in these Reviews that the effect of environment on mortality is at a maximum in the second year of life, and so it is just at this age that the country child should be relatively in the most favourable position for recovery from an attack of whooping cough. The fact that the same comparative rural immunity in the second year of life does not apply similarly to other infections of childhood may perhaps be an indication that recovery from attack is especially associated with physical fitness in the case of whooping cough.

The proportion of deaths under one year has been invariably higher for males during the 82 years under review, the difference being usually slight.

Infant mortality is indeed, as pointed out on page 15, consistently in excess for females, but after infancy female excess is still greater, so the proportion of infantile deaths is naturally lower for females.

10. **Diphtheria.**—The 3,446 deaths in 1929 include 1,632 of males and 1,814 of females. This excess for females is a very constant feature of the returns and is reflected in the generally higher standardized death-rate for females in Table 5A, which shows that the risk of death is actually somewhat greater for females, though the crude death-rate (Table 5) is generally higher for males. For 1929 the crude rates were 86 and 88 per million for males and females respectively, and the standardized 109 and 121.

The history of diphtheria mortality is best expressed by the death-rate from diphtheria and croup at ages under 15 in Table 6, as during last century much diphtheria was evidently returned as croup, and the larger proportional child population in itself tended to produce a higher crude death-rate at all ages. The rate for 1929, 328 per million aged 0-15, is higher than in any of the six preceding years, but lower than in any year before 1923. It is only about one-fourth of the maximum rates during the years 1856-65, or one-third of that marking the secondary peak of 1893.

Table XXXV.—Diphtheria, 1929 : Mortality per 100,000 living at Ages under 15 Years.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	32	—	32
County Boroughs ..	32	41	42	65	37
Other Urban Districts	25	37	35	36	33
Rural Districts ..	26	23	30	29	26
All Areas	29	35	33	40	33

Table XXXV shows that diphtheria mortality was on much the same scale for all the sections of population compared, except in the case of the Welsh county boroughs (197 per cent.), varying only from 127 per cent. of average for the county boroughs of the South to 70 for the Midland rural districts. The London rate was below average, for the first time since 1915.

For the country as a whole, outside London, the rate in 1929 increased regularly with urbanization, as also in ten more of the nineteen years (1911–29) for which this comparison can now be made. In five of these years this increase applied, without exception, to each of the three sections of England compared. Of late years, therefore, diphtheria has been chiefly an urban disease, though during the first 26 years of its recorded mortality in this country, 1855–80, this was greatest in the less densely populated areas. Possibly the new disease was earlier recognised in the towns than in the country. There is, indeed, much evidence to suggest that diphtheria is still much more freely returned in some sections of the population than in others. Thus the frequency of its notification is shown by Table XXXVI to have been at a maximum in London in 1929, as in each of the 13 preceding years. For London the prevalence rate of 113 notifications per 10,000 population shown in this table is 74 per cent. over the general average, and for the South as a whole, which has exceeded the average rate in each year 1911–29, 29 per cent.

So persistent a contrast suggests a varying standard of diagnosis, cases similar to the milder of those notified as diphtheria in London and the South of England not being so regarded elsewhere, especially in the North, where, as in 1929, fatality is invariably higher than in the Midlands or South, presumably in consequence of the smaller proportion of notifications, since the proportion of deaths is generally, as in 1929, much the same in the North as elsewhere (Table XXXV). Apparently, in the North of England fewer deaths from diphtheria are preceded by notification, and therefore those so certified must form a larger proportion of the notifications. In London, on the other hand, where notification reaches its maximum, the proportion of deaths

to cases notified was lower in 1929 than in any other section of the population (Table XXXVI), as has been the case now in each of the last five years. Deaths appear to vary much less in frequency throughout the country than notifications.

From 1911 onwards prevalence, as defined in Table XXXVI, has increased from 43 for England and Wales in 1911 to 65 in 1929, while fatality has fallen from 103 in 1911 (and 107 in 1915) to 55 in 1929. Thus the temporal contrast corresponds with that between the North of England (and Wales) and London, and is probably due to the same cause—increasing completeness of notification.

Table XXXVI.—Diphtheria, 1929 : Prevalence and Fatality.

	Cases per 10,000 Population aged 0–15 years.					Deaths per 1,000 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	113	—	113	—	—	30	—	30
County Boroughs	60	79	87	108	71	57	54	54	60	56
Other Urban Districts	38	69	64	63	58	72	58	62	60	62
Rural Districts	36	38	44	43	39	76	68	77	76	73
All Areas	50	64	84	66	65	63	58	44	63	55

It will be seen that the excess of prevalence in London falls into line with large excess for great towns over small, and for small towns over rural areas, in all parts of England, fatality, on the other hand, being higher in the rural districts, as it is lower in London, than in the other towns, great or small, of England and Wales.

Table 7 shows that the counties of highest mortality in 1929 were Dorsetshire (212 per million), Pembrokeshire (172), Lincolnshire Holland (168) and Cambridgeshire (150). The two latter, with rates of 124 and 158 in 1928, formed part of a group of four contiguous counties of outstanding mortality in that year. By far the highest rate for any county borough, comparing with an average of 100 for all, is that for Merthyr Tydfil (527), East Ham (285) and Coventry (234) coming next. All three, especially the two latter, returned high rates also in 1928.

11. Influenza.—The deaths assigned to this cause numbered 29,084, 13,867 of males and 15,217 of females. For both sexes these numbers are the highest since the end of the great epidemic in 1919. The resultant crude mortality rate of 734 per million, is reduced on standardization, by allowance for the increased age of the population to 587 (Table 6), 623 for males and 550 for females (Table 5A). In all three cases these rates, like the deaths, are the highest since 1919. This heavy mortality was, as already noted, concentrated on the first quarter of the year, 9,937 deaths occurring in February and 11,838 in March (Table 18) or 34 and 41 per cent. respectively of the total for the year.

In this respect 1929 falls into line with other years since the termination of the great epidemic, which have tended to show heavy mortality for the first three months of the year and very much lighter for the remaining nine, the former occurring in outbreaks at intervals of two or three years. This applies to the epidemics of 1922, 1924, 1927 and 1929 (Table 6) alike, as shown in the following table, continued from that on page 46 of the Review for 1927.

Table XXXVII.—England and Wales, 1921-29.—Influenza Mortality per million Population during the first 3 and last 9 Months of each Year.

				January–March.	April–December.
1921	..	..	..	356	198
1922	..	..	..	1,854	133
1923	..	..	..	240	214
1924	..	..	..	1,322	213
1925	..	..	..	783	175
1926	..	..	..	298	206
1927	..	..	..	1,827	147
1928	..	..	..	332	152
1929	..	..	..	2,450	173

In each of these four years the death-rate of the first quarter rose enormously (in 1929 by 638 per cent.) while that of the other nine months was little affected.

The age distribution of influenza deaths, which for many years after 1918 retained some trace of its remarkable diversion towards early life in the great epidemic, now appears to have lost this impress, being much the same for 1929 as before the shift

Table XXXVIII.—England and Wales.—Age Distribution of Deaths from Influenza in the Standard Population (1901) at the Age-Group Mortality Rates experienced in contrasted periods.

Deaths per 1,000 at all Ages.

	In each Age-group.				Up to and including each Age-group.			
	1890–1917.	1918.	1928.	1929.	1890–1917.	1918.	1928.	1929.
0– ..	119	259	151	154	119	259	151	154
15– ..	121	447	159	106	240	706	310	260
35– ..	206	182	229	204	446	888	539	464
55– ..	367	93	321	327	813	981	860	791
75– ..	187	19	140	209	1,000	1,000	1,000	1,000
All ages	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000

towards youth in 1918. This is shown by Table XXXVIII in which, to eliminate the effects of the increasing age of the population, which would of itself increase the proportions of deaths at the later ages, the proportions compared are those of deaths in the standard population (1901).

Apart from a somewhat greater incidence on childhood, the proportion of deaths at each age dealt with was much the same in 1929 as before 1918, and at ages over 75, at which the proportion had tended, ever since its remarkable depression in 1918, to remain below that in 1890–1917, the latter is now exceeded.

But material is now, for the first time since 1918, available for tracing the history of the change in age distribution which then occurred, and its sequel in subsequent years by comparison of the actual death-rates at the various ages. This proves that the 1918 concentration on ages 15–35 did not last more than two or three years, though the proportions of total deaths at the various ages, regarded from the point of view of Table XXXVIII, seemed to suggest a much more lasting change.

The distribution of influenza mortality throughout the country is indicated in Table XXXIX.

Table XXXIX.—Influenza, 1929 : Civilian Mortality per Million Living at All Ages.

	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	706	—	706
County Boroughs ..	823	851	695	432	801
Other Urban Districts ..	818	673	642	538	700
Rural Districts	695	750	728	539	710
All Areas..	804	751	692	516	737

The highest rate in the table is that for the county boroughs of the Midlands, and, generally, there is little tendency for 1929 towards rural excess, as noted for some earlier years, the rural district rate being, indeed, lower than that for England and Wales. On the whole, in fact, the table shows much uniformity for all sections of the population compared. Wales, indeed, escaped lightly, returning the lowest rate in the table for each class of area. It was the last section of the country to be struck by the epidemic, which never attained the same intensity there as elsewhere. The progress of the epidemic throughout the country may be gathered from Table XL copied from the Weekly Return for March 30 and from Diagram I derived from it. These figures relate solely

to the 107 great towns, for which alone such information is available, but in the case of an infection like influenza the experience of the towns must be in close conformity with that of their surrounding areas.

In the table and the diagram both the Midlands and the South exclude Greater London and differ to that extent from the significance of the term "Midlands" or "South" as used elsewhere in this Review.

Table XL.—Influenza, 1929 : Annual death-rates during each week of the epidemic per 1,000 Population, in the Aggregate of the 107 Great Towns, Greater London, and the Great Towns of the North, Midlands, South and Wales.

Week ended.	Aggregate.	North.	Midlands (excluding Greater London).	South (excluding Greater London).	Wales.	Greater London.
8th Dec., 1928	0·16	0·20	0·20	0·12	0·13	0·10
15th ,, ,,	0·16	0·19	0·12	0·32	0·20	0·14
22nd ,, ,,	0·18	0·23	0·16	0·28	0·20	0·11
29th ,, ,,	0·22	0·29	0·19	0·24	—	0·17
5th Jan., 1929	0·26	0·26	0·29	0·36	0·20	0·26
12th ,, ,,	0·32	0·35	0·43	0·28	0·33	0·27
19th ,, ,,	0·47	0·52	0·44	0·80	0·27	0·38
26th ,, ,,	0·85	1·05	0·36	1·52	0·47	0·81
2nd Feb., ,,	1·73	2·14	0·48	2·56	0·53	1·89
9th ,, ,,	2·56	2·96	0·77	2·64	0·80	3·20
16th ,, ,,	3·29	3·54	1·84	2·00	0·94	4·34
23rd ,, ,,	4·67	5·19	3·84	3·52	1·20	5·35
2nd Mar. ,,	5·78	6·26	7·57	4·52	1·87	5·04
9th ,, ,,	5·64	5·87	9·67	2·96	2·54	3·97
16th ,, ,,	4·11	4·08	7·72	2·80	2·74	2·65
23rd ,, ,,	2·56	2·59	4·33	1·96	2·34	1·67
30th ,, ,,	1·42	1·48	2·17	1·36	1·87	0·91

Starting for the aggregate of these towns to rise in the week ended 22nd December, 1928, which accordingly may be styled the first week of the epidemic, their mortality progressively increased to a maximum in the eleventh week, that ending on 2nd March, after which it steadily and rapidly fell. In this course the epidemic of 1929 conformed generally to the type established by other similar invasions, including the three waves of the great epidemic of 1918–1919, which lasted 12, 19 and 15 weeks respectively. The rate for the Northern towns began to rise in the first week, and that for the Southern (excluding Greater London) almost simultaneously, and progress continued in these two areas to a maximum in the eleventh week. The rate for the Midlands which were thus flanked on both sides by the Northern and Southern invasions, followed the same course a

Diagram 1.—Influenza, 1929: Annual death-rates during each week of the epidemic per 1,000 Population, in Greater London, and the Great Towns of the North, Midlands, South and Wales.
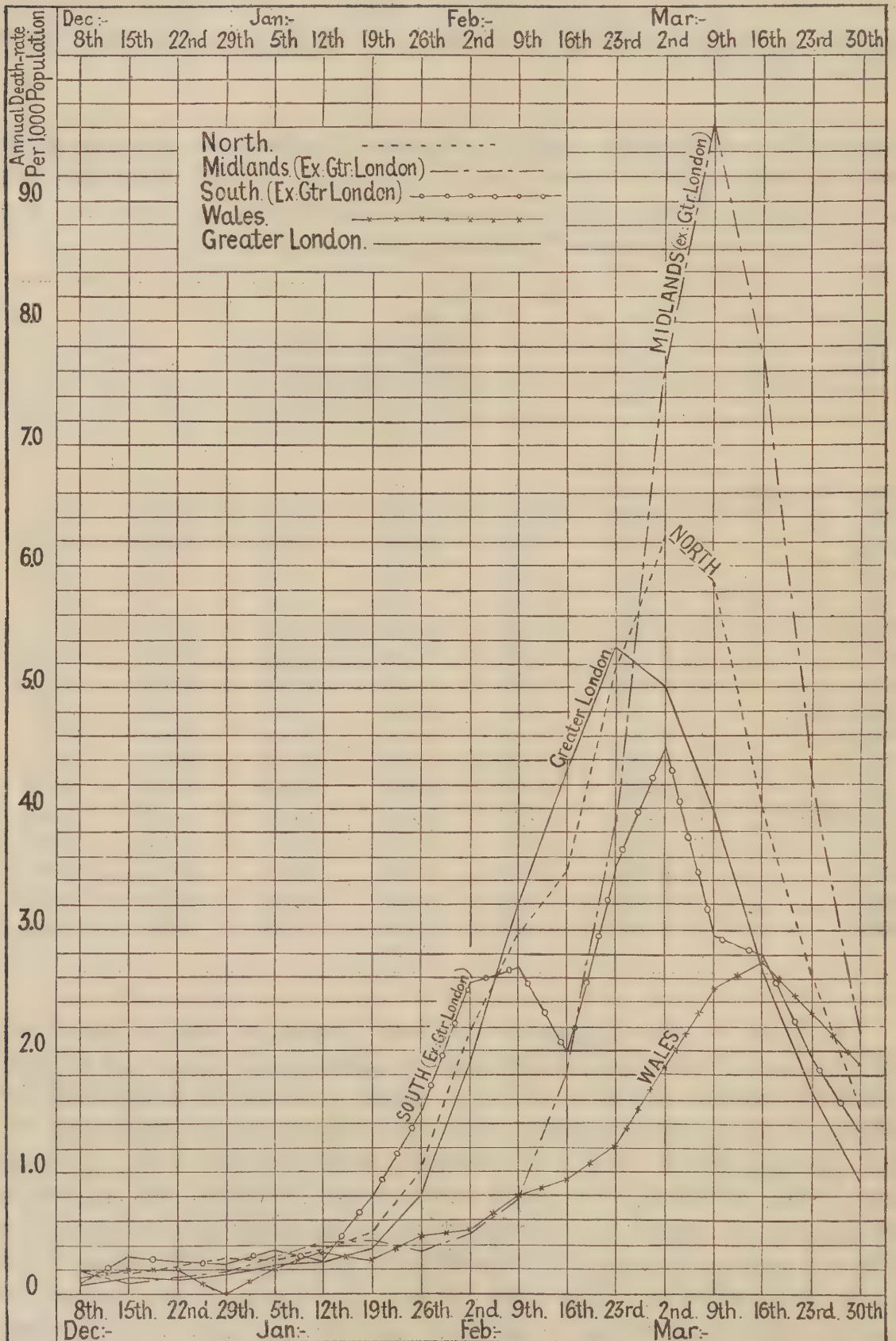
little later, reaching its maximum, followed by the usual rapid fall, in the 12th week. These events, represented in Diagram I, suggest the existence of two waves of invasion, from the South and from the North simultaneously spreading inland to coalesce in the Midlands at the height of the epidemic, and it will be seen that the highest rates for the year were reached in the Midland towns at this time.

Increase for Greater London, beginning in the week ending 15th December, continued as elsewhere for about 12 weeks, and was followed by the same rapid fall. Wales escaped the first few weeks of the epidemic, and so, reaching its maximum after the usual interval somewhat later than the other areas, was less affected during its progress by the severe cold of the season, and for this or other reason suffered less than the rest of the country almost throughout.

23. **Encephalitis Lethargica.**—Deaths attributed to this disease numbered 1,037, 517 of males and 520 of females yielding standardized death-rates of 25 per million for males and 23 for females. For each sex these are the lowest rates since 1923 (Table 5A). The 1,038 notifications (Table 27), though also fewer than in any year since 1923, are practically equal in number to the deaths, yielding a fatality rate of 999 deaths per 1,000 notifications (Table XXVII). This represents an abrupt contrast with the experience of 1928, when notifications were in considerable excess of deaths, yielding a fatality rate of 819 per 1,000. But in 1929, Table XLI shows that, outside London, deaths practically equalled notified cases, and in many sections of the population actually exceeded them.

Table XLI.—Encephalitis Lethargica, 1929 : Prevalence and Fatality.

	Cases per 1,000,000 Population.					Deaths per 100 Cases notified.				
	North.	Midlands.	South.	Wales.	England and Wales.	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	21	—	21	—	—	68	—	68
County Boroughs	36	23	23	18	30	85	119	139	40	97
Other Urban Districts.	34	26	24	24	28	115	96	90	94	102
Rural Districts	26	19	21	18	21	133	109	109	147	119
All Areas	34	23	22	21	26	100	106	92	98	100

In London both fatality and especially prevalence are very much below the general average and the table suggests the likelihood that the disease may be very much over-diagnosed elsewhere. It is possible that some deaths ascribed to attacks of the disease were not recognized and notified as such during life. The

fatality rates in Table XLI are evidently so much overstated that little reliance can be placed on the numbers of deaths. For this, several causes may share responsibility. Since so much emphasis has been attached to the serious nature of the remote after effects of this disease a tendency may have arisen in recent years to attribute deaths accompanied by features resembling these to the remote effects of hypothetical past infection. Such a practice, in conjunction with the high preference given to encephalitis lethargica when appearing as an immediate or a contributory cause with other independent diseases on the same certificate, would be very likely to result in attribution to the disease of a number of deaths for which it may not have been responsible. Under the rules in use (Manual of the International List of Causes of Death, page xxii) encephalitis lethargica is selected for tabulation in preference to almost any other cause of death returned on the same certificate. When these deaths were first distinguished in 1919 this high degree of preference seemed desirable, in view of the very fatal character of the cases so described, but it may be that it is less suited to present conditions. The inclusion from year to year of an increasing number of deaths from chronic forms of the disease contracted in earlier years also tends to vitiate the relation between the deaths registered and the new cases of the disease notified during the year.

Table XLII.—Encephalitis Lethargica, 1929 : Crude Civilian Mortality per Million Living at All Ages.

	North.	Midlands.	South.	Wales.	England and Wales.
London	—	—	14	—	14
County Boroughs..	31	27	32	7	29
Other Urban Districts.	39	25	21	23	28
Rural Districts ..	34	21	23	26	25
All Areas	34	25	20	21	26

The excessive rural fatality of Table XLI, greatest in the North and in Wales, is seen to be accompanied by, and no doubt largely due to, excess of rural mortality in the same areas. It would appear, therefore that whatever the causes of overstatement may be, they are most effective in the rural districts of these sections of the country. The London rate, on the other hand, has been generally below average, its percentage ratio to that for England and Wales having been as follows during 1921–29—1921, 84 ; 1922, 122 ; 1923, 79 ; 1924, 92 ; 1925, 80 ; 1926, 59 ; 1927, 59 ; 1928, 41 ; 1929, 54.

This low London mortality is shown in Table XLI to be due both to low prevalence and low fatality, as recorded in London for 1929.

As in the eight preceding years, with which alone comparison is possible the mortality of both sexes in 1929 was widely, and on the whole evenly distributed over all periods of life, old age no longer escaping lightly as it had done in previous years. For each sex the rate gradually increased with advance of age, as in previous years, to a maximum in later life (at 55–65 for each sex).

25. **Other Epidemic Diseases.**—The number of deaths so classified in 1929 was 94, chiefly composed of 31 from German measles and 53 from varicella, particulars of which are included in Table 17. Of the other 10 deaths from miscellaneous infections (8 of which were of males), 5 were ascribed to blackwater fever, 2, those of the only females, to glandular fever, 1 to kala-azar, 1 to rat bite fever, and 1 to trypanosomiasis.

31–37. **Tuberculosis.**—The deaths assigned to tuberculous affections in the aggregate number 37,990—21,286 of males and 16,704 of females—1,367 more than those so classified in the previous year.

The standardized death-rate resulting from these figures, 932 per million persons (males 1,057, females 820), is the lowest yet recorded (Table 6) except that of 909 in 1928.

As the total increase over 1928 of 1,367 deaths occurred during the influenza epidemic of January–March, when there were 1,561 more deaths than in the same months of 1928, there can be little doubt that this epidemic, and the severe weather accompanying it, have caused the increase of tuberculosis mortality in 1929. For these three months the increase in deaths of males was 1,000, and of females 561.

Table XLIII.—England and Wales : Mortality from Tuberculosis (All Forms) per Million Population, 1912–14, 1927, 1928, and 1929.

		Males.				Females.				Persons.		
	1912–14	1927	1928	1929	1912–14	1927	1928	1929	1912–14	1927	1928	1929
⎰ Crude	1,571	1,112	1,067	1,122	1,169	842	800	809	1,364	972	928	959
⎱ Stand-ardized	1,542	1,061	1,015	1,057	1,174	854	812	820	1,349	952	909	932
.. ..	2,081	1,012	911	935	1,717	819	748	762	1,900	916	830	849
.. ..	572	329	325	301	580	336	311	293	576	332	318	297
.. ..	447	259	265	278	687	417	403	384	568	338	334	331
.. ..	939	796	788	787	1,226	1,196	1,195	1,156	1,084	995	991	971
.. ..	1,501	1,221	1,204	1,225	1,381	1,433	1,397	1,472	1,439	1,328	1,301	1,349
.. ..	1,816	1,337	1,301	1,298	1,403	1,222	1,159	1,172	1,599	1,275	1,225	1,231
.. ..	2,189	1,620	1,505	1,590	1,374	884	820	840	1,767	1,221	1,133	1,182
.. ..	2,384	1,750	1,626	1,819	1,185	703	647	669	1,762	1,196	1,106	1,205
.. ..	2,213	1,317	1,318	1,448	967	592	552	555	1,553	936	916	979
.. ..	1,378	936	917	986	752	476	471	481	1,031	683	672	708
d up ..	586	453	375	411	440	304	311	290	498	362	336	337

The increase in 1929 is seen from Table XLIII to apply to all ages over 20 except in the case of males at 25–35 and females of over 75. The feature of the year has been this increase of mortality at the higher ages, presumably associated with the low temperature and influenza of the first three months.

In order to give a somewhat longer range view of the reduction of tuberculosis mortality as it affects individuals of varying sex and age, Table XLIV is continued from previous reviews.

Table XLIV.—England and Wales: Mortality from Tuberculosis in 1929, per cent. of that in 1912–14.

		Males.	Females.	Persons.
All Ages	⎧ Crude ⎨ Standar- ⎩ dized.	71 69	69 70	70 69
0–	.. ..	45	44	45
5–	.. ..	53	51	52
10–	.. ..	62	56	58
15–	.. ..	84	94	90
20–	.. ..	82	107	94
25–	.. ..	71	84	77
35–	.. ..	73	61	67
45–	.. ..	76	56	68
55–	.. ..	65	57	63
65–	.. ..	72	64	69
75–	.. ..	70	66	68

In this table the mortality of the year under review is compared at each age with the most exacting pre-war standard available— the rates for 1912–14, after which war and influenza brought about a temporary increase. The fall since 1912–14 is seen to be slightly increased on standardization, from 30 to 31 per cent. for persons of both sexes, a trifling decrease (31 to 30 per cent.) for females being more than counterbalanced by an increase from 29 to 31 per cent. for males. Reduction is greatest in childhood and least in youth, the rate for females of 20–25 showing actual increase. At this age, which has been that of highest mortality for females from 1918 onwards, their rate has exceeded that for 1912–14 in each year from 1915 onwards. This contrast between a stationary or even increasing death-rate for females of 20–25 with decreasing rates for females of other and for males of all ages is not new, and cannot be a consequence of war conditions, which it antedates. Rapid fall in their mortality during 1901–10 suddenly ceased shortly after, and has not since been resumed.

After 25 a second period of substantial reduction succeeds that of non-reduction in youth. This applies especially to females, whose rates have fallen more than those of males at all ages over 35. For each of these five age-groups the rate for the sexes jointly is now only about two-thirds what it was immediately before the war.

The recent history of tuberculosis mortality in this country, since the time of its large apparent increase by the great influenza epidemic of 1918–19, is set forth in Table XLV. The death-rates shown for total and for respiratory tuberculosis are in each case compared with those extrapolated from the curve of declining mortality for the years 1866–1914, when, as discussed in the Review for 1921, the rate of fall recorded was remarkably constant.

Table XLV. England and Wales: Mortality from Tuberculosis in each Year 1920–29.

Standardized Rates per Million and Comparison of these with those predictable on the assumption of continuance of fall since 1866-1914 at the same rate as during that Period (see Review for 1921, Diagram 4).

	Recorded Mortality (Standardized).						Mortality calculated by Prolongation of the Curve of decline during 1866–1914.						Recorded Mortality per cent. of calculated.					
	All Forms.			Respiratory.			All Forms.			Respiratory.			All Forms.			Respiratory.		
	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.	Males.	Females.	Both Sexes.
1920	1,248	1,010	1,123	940	737	833	1,264	955	1,101	991	693	833	99	106	102	95	106	100
1921	1,233	1,011	1,117	944	757	845	1,221	927	1,065	970	681	816	101	109	105	97	111	104
1922	1,241	985	1,107	963	745	848	1,177	899	1,029	949	670	801	105	110	108	101	111	106
1923	1,164	942	1,049	900	707	798	1,134	871	994	929	660	785	103	108	106	97	107	102
1924	1,156	934	1,039	904	708	801	1,090	844	958	909	651	771	106	111	108	99	109	104
1925	1,143	904	1,017	895	691	788	1,046	817	923	890	642	756	109	111	110	101	108	104
1926	1,058	839	942	829	638	730	1,002	791	888	871	635	743	106	106	106	95	100	98
1927	1,061	854	952	838	660	744	958	766	853	852	628	730	111	111	112	98	105	102
1928	1,015	812	909	803	625	709	913	741	818	833	623	718	111	110	111	96	100	99
1929	1,057	820	932	846	641	738	869	716	784	815	618	707	122	115	119	104	104	104

While the rates both for respiratory and for total tuberculosis have continued for both sexes to fall since the war at much the same steady rate as before it, the rise of mortality in 1929 has increased a tendency already observable for the recorded rates to exceed those calculated from the curves for 1866–1914, so that in 1929, as also in 1922 and 1925 the recorded rates for each sex both for respiratory and total tuberculosis exceed those calculated from the 1866–1914 curves. But the extent of this excess remains remarkably small, ranging only from 4 per cent. for the respiratory form in both sexes to 22 per cent. for total tuberculosis in males. The close agreement shown for 1920 between recorded and calculated rates shows how quickly after the war all trace of the increase of mortality which accompanied it disappeared.

The 31,425 deaths from respiratory tubercle form 83 per cent. of the total allocated to tuberculosis, and 5·9 per cent. of those from all causes.

The distribution of this mortality by class of area as well as by sex and age is shown in Table XLVI.

Table XLVI.—Tuberculosis of the Respiratory System.—Civilian Mortality at Different Ages, 1929.

	Mortality per 100,000 Civilians Living at Various Age Groups.						Ratio per cent. of Mortality in England and Wales.				
	England and Wales.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.	London.	County Boroughs.	Other Urban Districts.	Rural Districts.	All Urban Districts.
MALES.											
All Ages—											
Crude	94	124	118	81	64	102	132	126	86	68	109
Standardized	85	108	105	74	60	92	127	124	87	71	108
0—	14	14	19	13	8	16	100	136	93	57	114
5—	9	7	12	8	7	9	78	133	89	78	100
15—	87	102	108	76	62	93	117	124	87	71	107
25—	120	141	134	107	106	124	118	112	89	88	103
35—	150	185	180	133	107	160	123	120	89	71	107
45—	173	244	230	138	98	192	141	133	80	57	111
55—	136	212	179	116	74	155	156	132	85	54	114
65—	89	132	125	69	59	100	148	140	78	66	112
75 & up	33	86	35	28	22	38	261	106	85	67	115
FEMALES.											
All Ages—											
Crude	66	72	77	60	55	69	109	117	91	83	105
Standardized	64	67	74	58	56	66	105	116	91	88	103
0—	13	12	20	8	8	14	92	154	62	62	108
5—	14	13	17	14	11	15	93	121	100	79	107
15—	117	125	129	110	100	120	107	110	94	85	103
25—	109	102	126	98	100	111	94	116	90	92	102
35—	77	84	88	69	69	79	109	114	90	90	103
45—	60	72	73	51	47	63	120	122	85	78	105
55—	48	56	60	40	39	50	117	125	83	81	104
65—	40	50	42	37	39	41	125	105	93	98	103
75 & up	20	32	19	18	18	21	160	95	90	90	105
PERSONS.											
All Ages—											
Crude	80	96	96	70	59	85	120	120	88	74	106
Standardized	74	87	89	65	58	78	118	120	88	78	105
0—	14	13	19	11	8	15	93	136	79	57	107
5—	12	10	14	11	9	12	83	117	92	75	100
15—	102	114	119	93	80	107	112	117	91	78	105
25—	114	119	130	102	103	116	104	114	89	90	102
35—	110	128	130	98	86	116	116	118	89	78	105
45—	113	150	147	91	71	123	133	130	81	63	109
55—	90	128	116	76	56	100	142	129	84	62	111
65—	62	85	79	51	49	67	137	127	82	79	108
75 & up	25	51	25	22	20	27	204	100	88	80	108

The relation of phthisis mortality to urbanization is expressed by the decline of the standardized rate for persons from 87 per 100,000 in London and 89 in the county boroughs to a minimum of 58 in the rural districts, the latter being 22 per cent. below the general average, and the county borough maximum 20 per cent. above it.

As in previous years (1921–28) for which this comparison has been made, the experience of females in London has been much superior to that of males, their rate being 5 per cent. above average, whereas that for London males is 27 per cent. in excess. Urbanization in fact, increases phthisis mortality much more for males than for females. As in other years also, this applies particularly to the higher ages. The contrast between a low early (0–5) mortality in London—7 per cent. below average for the sexes jointly—and a high rate in the county boroughs—36

per cent. above average—is also a recurrent feature, the recorded mortality of early life generally being consistently much higher in the county boroughs than in London, and that of later life lower. Taking the London rate as 100 at each age, the ratios for the county boroughs (both sexes) for each of the seven recent years for which this table has been published are as follows :—

		1922	1923	1924	1926	1927	1928	1929
0–	..	164	129	175	244	210	138	146
5–	..	157	146	140	160	178	160	140
15–	..	101	109	108	108	102	97	104
25–	..	106	108	108	111	113	109	109
35–	..	106	104	107	115	105	108	102
45–	..	85	91	88	99	101	102	98
55–	..	75	90	86	89	97	88	91
65–	..	67	81	93	80	74	100	93
75–	..	41	72	53	75	66	64	49

This relationship, however, has not existed in its present form for very long. In both 1911 and 1913, for which similar tables were published, the London rate at 0–5 was in considerable excess of that for the county boroughs. But in each of those years, as recently, London mortality was uniformly higher throughout later life, the excess setting in earlier, at 30 instead of 45.

If it may be assumed that the returns are most accurate in London, where hospital and other facilities for accurate certification are probably at a maximum, then it would seem that elsewhere there is a tendency to over-diagnosis of phthisis in childhood and to its under-diagnosis in old age, when certainty of recognition becomes difficult, and when English mortality rates are particularly low compared with those of other countries. At 75– the county borough rate is, as also in 1922, less than half that for London.

Table 7 shows that, as in 1927 and 1928, London returned the highest death-rate (957 per million) from phthisis amongst the English counties, though in Wales five higher rates were recorded, as also in 1928. Amongst counties of over 100,000 population the lowest rates were those of Wiltshire, 500 ; Berkshire, 522 ; Cheshire, 535 ; Sussex West, 535 ; Derbyshire, 545 ; Lincolnshire Kesteven, 545 ; and Buckinghamshire, 547 per million.

It is by this type of agricultural and residential county that the lowest rates are usually returned. That for Buckinghamshire was lowest of all in both 1927, and 1928. The highest county borough rates were those for South Shields, 1,413 ; Middlesbrough, 1370 ; Gateshead, 1281 ; and Manchester, 1247. South Shields returned the highest rate also in 1928. The Eastbourne rate, 512, was lowest.

The death-rates from all the forms of non-respiratory tuberculosis mortality distinguished continue to fall rapidly, as may be seen from Table 5, although the crude rates in this table somewhat exaggerate the fall, which is due partly to the decreasing proportion of young children in the population. Even, however, when allowance has been made for this by standardization in Table 5A the rate of fall remains much higher for non-respiratory than for respiratory tubercle. It is greatest of all for tuberculosis of the intestines and peritoneum—for males from 73 in 1919 (111 in 1915) to 37 in 1929, and for females from 74 in 1919 (98 in 1915) to 35 in 1929. During this period a formerly much favoured form of return—tabes mesenterica, classified to this title, has practically passed out of use.

The rapidity with which non-respiratory tuberculosis mortality in general continues to fall may be gathered from Table XLV. During the ten years covered by this table the standardized rate for both sexes has fallen without interruption from 290 to 194 per million or by 33 per cent., whereas that from the respiratory form of the disease has fallen only by 11 per cent. During these ten years the proportion of non-respiratory to total (standardized) mortality has fallen from 26 to 21 per cent.

42 (1). **Vaccinia.**—The deaths classified to this cause have increased from one in 1926 and in 1927 to 18 in 1928 and 14 in 1929. The increase in the two latter years is chiefly accounted for by post-vaccinal encephalitis, to which no deaths were attributed in 1927, but 13 in 1928 and 11 (5 of males and 6 of females) of ages ranging from six months to 31 years, in 1929. In addition to these the 1929 deaths include one (of a male of four weeks) attributed simply to " vaccination " and two others attributed to vaccinia in association with bronchitis, and with septicæmia and pyæmia.

Three other deaths from septic infection of vaccination wounds were classed to septicæmia (or cellulitis), in conformity with the international rule of assignment in such cases. In nine other cases where vaccination was mentioned in association with fatal conditions of different nature, and without implication of its responsibility for death, the other condition (meningococcal meningitis, purulent meningitis, myelitis of the spinal cord, broncho-pneumonia (two deaths), gastro-enteritis, bronchitis, tuberculosis of the central nervous system, and encephalitis) was preferred to vaccination, which was frequently stated to have had no direct bearing on the death, or even to have been unrelated to its chief cause.

43–49. **Cancer.**—The deaths ascribed to cancer during 1929 number 56,896—26,284 of males and 30,612 of females. For both sexes these numbers are the highest yet recorded.

Of these deaths 47,513 were referred to carcinoma, 2,807 to sarcoma, and 6,576 to "cancer" not otherwise defined. These are the largest numbers yet recorded for total cancer and for carcinoma, but not for sarcoma, which of late years has accounted for a somewhat smaller proportion of the total cancer deaths than heretofore. Indeed, its ratios of 49 per 1,000 total cancer deaths in 1928 and 1929 are the lowest yet returned, and the first of less than five per cent.

The standardized death-rate for males in 1929 amounts to 1,031 per million, and that for females to 999. Both these rates may be seen from Table XLI, 1927, to exceed all those of earlier years. The same table shows that since, in 1924, the standardized rate for males first exceeded that for females, this excess was maintained in 1925, 1926 and 1927, as it has been also in 1928 and 1929. The crude death-rate is seen from Table 5 to be in constant excess each year for females. But this is because of their greater age, and when this is allowed for by standardization, Table 5A shows the rate for males as constantly in excess during 1924-29.

The mortality from cancer as a whole is compared by sex and age in Table XLVIII for England and Wales and its chief classes of area, and in somewhat greater detail in Table XLVII for England and Wales only, with record of the degree of difference in sex mortality at the various ages.

Table XLVII.—England and Wales : Mortality from Cancer (All Sites), 1929.

	Mortality per Million.			Sex Ratio.		
	Males.	Females.	Persons.	Males.	Females.	Persons.
All ⎰ Crude	1,386	1,483	1,437	965	1,032	1,000
Ages ⎱ Standardized	1,031	999	1,010	1,021	989	1,000
0—	36	36	36	998	1,002	1,000
5—	19	18	19	1,023	977	1,000
15—	46	41	44	1,058	942	1,000
25—	121	158	141	858	1,121	1,000
35—	430	735	596	721	1,233	1,000
45—	1,576	2,077	1,844	855	1,126	1,000
55—	4,633	4,096	4,351	1,065	941	1,000
65—	9,976	8,155	8,975	1,112	909	1,000
75—	14,291	12,331	13,101	1,091	941	1,000

It will be seen that except for a period of continuous female excess from 25 to 55 the rates for males are the higher throughout life. This female excess in middle age, greatest at 35–45, is associated with, and largely explained by the special frequency at this age of cancer of the uterus and of the female breast, which may be seen from Table L to be specially common at each age between 25 and 65 ; i.e. to account for a larger proportion of the total deaths of women at each of these ages than at all ages jointly. The percentage share of the breast and uterus in the total cancer mortality of females, as recorded in Table L, is :—

All ages	0–	25–	35–	45–	55–	65–	75–	85–
34·0	2·7	42·6	54·6	48·5	35·4	25·7	22·9	27·5

The rates per million males and females from cancer of sites other than the breast and genital organs in 1929 compare as follows :—

	All Ages (Standardized)	0–	25–	35–	45–	55–	65–	75–	85–
Males ..	960	33	109	412	1,524	4,419	9,098	12,795	12,418
Females ..	600	27	81	282	927	2,420	5,701	8,858	10,573
Male excess (per cent.)	60	22	35	46	64	83	60	44	17

Thus mortality from sites other than those associated with reproduction was higher for males than for females at every age, but chiefly at those ages at which female total mortality is in excess.

Table XLVIII.—Cancer.—Death-rates per 100,000 Living, 1901–10, 1911–20, 1928* and 1929*.

Age.	England and Wales.				1929.				
	1901–10	1911–20	1928.	1929.	London.	County Boroughs	Other Urban Districts	Rural Districts	All Urban Districts
MALES.									
All Ages—									
Crude ..	77	99	139	140	160	144	133	133	142
Standardized	78	90	103	103	122	119	99	82	110
0– ..	2	2	2	2	3	2	3	3	2
15– ..	4	4	5	5	5	5	5	4	5
25– ..	11	11	12	12	15	13	10	12	12
35– ..	41	42	43	43	53	48	39	36	45
45– ..	155	168	163	158	196	175	146	129	165
55– ..	390	444	474	463	564	563	435	327	505
65– ..	668	800	996	998	1,104	1,155	1,001	785	1,076
75 and up	787	973	1,355	1,429	1,746	1,640	1,383	1,227	1,526
FEMALES.									
All Ages—									
Crude ..	103	117	147	148	152	145	148	153	147
Standardized	94	96	100	100	105	107	99	89	103
0– ..	2	2	2	2	3	2	2	2	3
15– ..	3	3	4	4	6	4	3	5	4
25– ..	17	16	17	16	16	18	15	13	16
35– ..	85	79	79	74	70	81	74	61	76
45– ..	232	227	215	208	225	222	204	181	214
55– ..	441	438	413	410	430	450	402	354	425
65– ..	666	711	785	816	842	881	806	737	840
75 and up	790	919	1,205	1,233	1,323	1,253	1,248	1,157	1,261
PERSONS.									
All Ages—									
Crude ..	90	108	143	144	155	145	141	143	144
Standardized	87	93	101	101	113	112	99	85	106
0– ..	2	2	2	2	3	2	2	2	2
15– ..	4	4	4	4	6	4	4	4	4
25– ..	14	13	15	14	16	16	13	12	14
35– ..	64	61	63	60	62	66	58	50	62
45– ..	195	198	190	184	212	200	177	157	191
55– ..	417	441	442	435	492	503	417	341	463
65– ..	667	751	880	897	955	1,002	892	760	944
75 and up	789	940	1,264	1,310	1,474	1,395	1,299	1,188	1,360

* Civilians only.

Table XLVIII contains the usual annual statement of cancer mortality distribution by sex, age, and class of area, and resembles closely those for earlier years.

As usual, the mortality recorded is highest in London and the county boroughs, and lowest in the rural districts. The standardized rate for persons of both sexes declines regularly, with each decrease of urbanization, from the one extreme to the other. This is a very constant rule to which the thirteen years now available for comparison (1911–14 and 1921–29) have furnished but one exception. During these years the London rate has ranged from 110 to 115 per cent. of that for England and Wales, that for the county boroughs from 105 to 111, that for the smaller towns from 97 to 100, and that for the rural districts from 84 to 90. Such an association with urban life at once suggests that cancer may be most met with in the towns because hospital and other facilities for its recognition are there greatest.

Table XLIX.—England and Wales, 1929—Sites of Fatal Cancer.

	All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85
							DEATHS OF MALES.									
All Sites	26,284	56	64	163	347	333	728	1,255	2,341	3,537	4,418	4,795	4,001	2,754	1,102	390
Lip	260	—	—	—	—	1	4	4	11	24	50	43	36	36	38	13
Tongue	1,100	—	—	—	1	1	13	37	111	166	236	223	173	90	34	15
Mouth and tonsil ..	721	1	—	1	3	5	6	32	62	116	142	127	115	77	29	5
Jaw	488	2	3	9	4	6	14	21	48	59	93	83	78	44	16	8
Total	2,569	3	3	10	8	13	37	94	232	365	521	476	402	247	117	41
Pharynx	359	—	4	3	5	3	3	11	38	69	68	60	54	28	12	1
Œsophagus	1,642	—	—	—	8	3	19	52	162	277	355	316	238	140	56	16
Stomach	6,116	—	—	6	73	95	200	404	594	863	1,070	1,109	908	554	185	55
Liver and gall bladder..	1,574	1	3	1	14	14	36	60	98	182	241	325	286	212	73	28
Total	9,691	1	7	10	100	115	258	527	892	1,391	1,734	1,810	1,486	934	326	100
Mesentery and peritoneum	101	2	—	8	6	7	12	8	11	17	8	10	9	1	2	—
Intestines	3,413	1	1	14	33	41	78	142	225	407	527	665	572	455	195	57
Rectum and anus ..	2,770	—	1	7	44	22	54	105	226	378	478	543	422	322	133	35
Total	6,284	3	2	29	83	70	144	255	462	802	1,013	1,218	1,003	778	330	92
Breast	46	—	—	—	1	—	3	3	4	4	7	8	7	5	2	2
Penis	143	—	—	—	2	—	4	4	19	13	20	22	30	18	7	4
Scrotum	69	—	—	—	—	3	1	4	8	10	9	20	9	2	2	1
Other skin	664	—	—	7	10	9	12	15	27	57	79	71	116	117	87	57
Total	876	—	—	7	12	12	17	23	54	80	108	113	155	137	96	62
Larynx	831	—	—	—	1	5	16	31	90	148	169	165	125	64	13	4
Lung and pleura ..	849	1	2	16	29	22	87	86	141	153	117	102	54	30	8	1
Pancreas	780	—	1	—	9	11	27	59	95	123	121	142	97	66	19	10
Kidneys and suprarenal glands	309	26	11	5	9	17	12	17	41	50	38	38	24	12	8	1
Bladder	823	2	2	—	5	3	18	20	71	101	145	149	134	113	39	21
Prostate	1,430	—	—	—	2	2	3	15	44	92	200	320	346	257	106	43
Testis	111	1	—	5	27	13	16	9	10	4	8	8	4	3	2	1
Brain and meninges ..	81	—	7	7	8	8	9	13	12	3	8	2	3	—	1	—
Bones (jaw excepted) ..	407	6	12	42	19	11	22	29	50	56	46	58	25	19	9	3
Other specified organs..	772	11	15	16	25	25	38	55	95	118	128	109	77	47	10	3
Abdominal cavity, organ unspecified	68	—	1	—	1	2	3	3	8	3	8	10	15	10	3	1
Other and undefined ..	357	2	1	16	8	4	18	16	40	44	47	67	44	32	13	5
Total	6,818	49	52	107	143	123	269	353	697	895	1,035	1,170	948	653	231	93

Table XLIX.—England and Wales, 1929—Sites of Fatal Cancer.—*cont.*

	All Ages.	0–	5–	15–	25–	35–	40–	45–	50–	55–	60–	65–	70–	75–	80–	85–
						DEATHS OF FEMALES.										
All Sites	30,612	55	60	145	521	757	1,410	2,303	3,116	3,665	4,134	4,501	4,280	3,225	1,627	813
43 { Lip	19	—	—	—	—	—	1	1	1	1	1	3	3	5	2	1
Tongue	128	—	—	—	—	1	6	9	8	12	21	17	23	16	11	
Mouth and tonsil ..	105	1	1	1	1	6	—	8	9	11	17	15	12	12	8	3
Jaw	194	1	3	6	6	2	4	14	17	31	28	26	18	17	15	6
Total	446	2	4	7	7	9	11	32	35	55	67	61	56	50	36	14
44 { Pharynx	83	—	1	1	2	4	4	6	9	14	11	9	14	6	1	1
Œsophagus	568	—	—	—	5	12	23	43	66	76	88	73	78	57	33	14
Stomach	5,190	—	—	3	58	74	128	240	386	565	762	911	956	666	301	140
Liver and gall bladder..	2,155	4	—	2	20	21	47	83	178	201	314	370	392	316	148	59
Total	7,996	4	1	6	85	111	202	372	639	856	1,175	1,363	1,440	1,045	483	214
45 { Mesentery and peritoneum	204	5	4	7	3	9	14	18	21	26	29	22	21	19	3	3
Intestines	4,394	—	1	10	37	52	96	192	284	443	598	777	746	658	336	164
Rectum and anus ..	1,813	—	—	12	31	22	63	102	140	208	240	303	291	235	123	43
Total	6,411	5	5	29	71	83	173	312	445	677	867	1,102	1,058	912	462	210
46 { Ovary and Fallopian tube	1,191	1	1	25	30	47	87	153	181	173	169	158	105	48	11	2
Uterus	4,455	1	—	6	135	206	380	514	647	617	567	515	417	279	121	50
Vagina and vulva ..	376	1	—	—	3	8	12	14	23	43	44	62	62	60	28	16
Total	6,022	3	1	31	168	261	479	681	851	833	780	735	584	387	160	68
47 Breast	5,944	—	—	—	87	196	401	654	815	811	768	696	628	438	277	173
48 Skin	494	1	—	5	9	11	15	20	18	28	44	58	71	86	67	61
49 { Larynx	230	—	—	—	3	7	13	26	33	37	28	29	28	15	5	6
Lung and pleura ..	359	1	2	4	11	15	25	41	37	62	56	39	36	17	10	3
Pancreas	631	—	—	—	3	6	18	31	52	81	95	112	98	83	42	10
Kidneys and suprarenal glands	256	24	14	5	5	5	7	12	29	28	36	37	26	18	6	4
Bladder	394	—	1	1	—	—	6	16	29	37	50	71	83	59	23	18
Brain and meninges ..	79	4	3	7	10	7	7	14	11	6	4	1	3	2	—	—
Bones (jaw excepted)..	389	3	16	34	25	13	14	21	40	46	41	51	36	27	13	9
Other specified organs..	600	6	11	10	22	23	25	49	58	70	84	97	75	46	13	11
Abdominal cavity, organ unspecified	181	—	1	1	7	3	4	8	8	18	19	33	32	21	18	8
Other and undefined ..	180	2	1	5	8	7	10	14	16	20	20	16	26	19	12	4
Total	3,299	40	49	67	94	86	129	232	313	405	433	486	443	307	142	73

Cancer by Site.—The parts of the body affected by fatal cancer in 1929 are shown in Table XLIX in greater detail than that provided by the international classification, six out of its seven headings (Nos. 43–49) relating to cancer being subdivided according to a scheme approved by the Director of the Imperial Cancer Research Fund.

From this table comparisons have been prepared of the relative frequency of disease of different sites at all ages and at various age-groups, and of the proportionate share for each site of the total cancer mortality at each age in question (Table L).

In this table the twelve sites of chief importance for each sex have been dealt with by showing for each, at each age distinguished, its rank in order of frequency, and the proportionate extent of its contribution to total cancer mortality, taking the latter as 1,000.

Table L.—England and Wales, 1929.—Deaths of Males and Females from Cancer of the Chief Sites, showing Sites in order of Frequency and Proportion of Deaths for each Site per 1,000 total Cancer Deaths at the Same Age.

	All Ages.	0–	25–	35–	45–	55–	65–	75–	85–	All Ages.	0–	25–	35–	45–	55–	65–	75–	85–
	Order of Frequency									Proportion per 1,000 Cancer deaths.								
Males :—																		
Stomach	1	11	1	1	1	1	1	1	3	233	21	210	278	278	243	229	192	141
Intestine	2	4	3	2	2	2	2	2	2	130	57	95	112	102	117	141	169	146
Rectum and Anus.	3	8	2	4	3	3	3	3	5	105	28	127	72	92	108	110	118	90
Œsophagus	4	—	11	11	5	4	6	7	8	62	—	23	21	60	80	63	51	41
Liver and Gall bladder.	5	13	7	5	6	5	5	5	6	60	18	40	47	44	53	69	74	72
Prostate	6	—	18	20	15	8	4	4	4	54	—	6	5	16	37	76	94	110
Tongue	7	—	19	17	8	6	7	9	9	42	—	3	13	41	51	45	32	38
Skin	8	9	8	8	13	13	10	6	1	33	25	35	27	21	24	30	60	159
Lung and Pleura.	9	3	4	3	4	9	14	16	17	32	67	84	103	63	34	18	10	3
Larynx	10	—	19	12	9	7	8	12	14	32	—	3	20	34	40	33	20	10
Bladder	11	14	14	12	11	11	9	8	7	31	14	14	20	25	31	32	39	54
Pancreas	12	16	9	6	7	12	12	11	11	30	4	26	36	43	31	27	22	26
Females :—																		
Breast	1	—	2	1	1	1	3	3	1	194	—	167	276	271	202	151	147	213
Stomach	2	13	3	3	3	2	1	2	3	170	12	111	93	116	170	213	199	172
Uterus	3	9	1	2	2	3	4	5	6	146	27	259	270	214	152	106	82	62
Intestine	4	7	4	4	4	4	2	1	2	144	42	71	68	88	133	173	205	202
Liver and Gall bladder.	5	11	8	7	6	5	5	4	5	70	23	38	31	48	66	87	96	73
Rectum and Anus.	6	6	5	6	7	6	6	6	7	59	46	60	39	45	57	68	74	53
Ovary and Fallopian Tube.	7	3	6	5	5	7	7	12	20	39	104	58	62	62	44	30	12	2
Pancreas	8	—	15	12	9	8	8	8	11	21	—	6	11	15	23	24	26	12
Œsophagus	9	—	13	9	8	9	10	9	10	19	—	10	16	20	21	17	19	17
Skin	10	11	11	11	16	14	11	7	4	16	23	17	12	7	9	15	32	75
Bladder	11	15	—	20	13	11	9	11	8	13	8	—	3	8	11	18	17	22
Bones	12	1	7	10	11	11	13	13	12	13	204	48	12	11	11	10	8	11

The deaths at all ages under 25 amount to less than 1 per cent. of the whole. As indicated by Table XLIX, they are more numerous for males than for females, and the sites involved differ considerably from those chiefly concerned at the " cancer ages." This is associated with a considerable difference in the nature of the growths, 75·9 per cent. being sarcomatous, as against 4·9 at all ages jointly.

With this distinctiveness of nature is associated a very definite distinctiveness of site for these juvenile growths, the bones ranking first and the kidney second in each sex, while deaths from cancer of the sites of chief importance in later life are relatively few. The lung ranks third for males and the ovary for females at these ages, as also in 1928.

At the higher ages the stomach is of chief importance for males at each age between 25 and 85, and causes almost a quarter of their total deaths, this proportion being highest in middle life, 35–55. The intestine ranks next to the stomach in total mortality for males, falling short of it only because of the separate distinction of rectal cancer. If this is included the intestine takes first place for life as a whole, and also at all ages under 35 and over 65.

Cancer of the skin is largely confined to old age, when it becomes the chief risk, and causes almost 16 per cent. of the total deaths. Lung cancer is of much more importance in males than females, ranking ninth in importance for the former but only fourteenth for the latter.

In females cancer of the breast is the chief risk, apart from intestinal and rectal cancer taken together which then rank first in total mortality. The breast, however, takes first place at all ages between 35 and 65. The stomach ranks second, taking first place only at 65–75. The uterus comes next ranking first only at 25–35, when it accounts for about 26 per cent. of all cancer deaths. At 35–45 this proportion rises to 27, but it falls steadily afterwards as age advances.

The intestine ranks fourth but if, as already pointed out, rectal cancer is included, it becomes the site of chief importance for females, both at all ages and at ages over 65. It accounts for over 20 per cent. of their deaths.

Ovarian cancer, which has been noted as of great frequency in youth, becomes very rare in old age, causing only 0·2 per cent. of deaths at 85–.

The facts as to cancer mortality distribution by sex, age and site contained in Tables XLIX and L are summed up for each site in Table LI, which compares total mortality in 1929 with the rates for other recent periods for the same sex and site. In this table the tendency to increase of mortality merely in consequence of increase in the proportion of persons at risk falling within those ages at which cancer chiefly occurs, as well as the tendency to female excess for the same reason, has been allowed for by standardization, so that all the rates quoted may be compared with one another.

The chief increases in 1929 are for males—stomach 9·8 per million, prostate 2·6, rectum 2·3, intestine 1·8, pancreas 1·5, lung 1·4, pharynx 1·2, and kidney 0·7 ; and, for females, stomach 3·1, ovary 1·6, lung 1·5, jaw 1·0, skin 0·8, gall bladder 0·7, and kidney 0·6. Of these sites all, except the skin and jaw in females, record increases also since 1911–20 for both sexes, so they may be taken as fairly representative of the sites of greatest mortality increase at the present time. For each sex the stomach ranks first, and as in each the increase has been persistent and prolonged the importance of the share taken by the stomach in the total recorded increase is evident. Mortality is 44 per cent. greater for males than females.

Tongue.—The rate fell somewhat for each sex in 1929. From 1901 to 1919 it had been rising gradually for males, but since then it has fallen from 53·4 to 41·8 in 1929, a lower rate than in 1901–10. The very low rate for females, about one-tenth that for males, fluctuates little.

Table LI.—Cancer Mortality.—Rates per Million Population (Standardized) for the more important Sites for each Sex 1901–10, 1911–20, 1926, 1927, 1928 and 1929.

	All Sites.		Lip.		Tongue.		Mouth and Tonsil.		Jaw.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	784	942	12·8	0·8	43·1	4·4	?	?	22·6	6·9
1911–20	897	959	12·6	0·7	50·8	4·3	23·5	3·0	25·1	7·2
1926	1,011	995	10·6	0·6	43·7	3·7	29·6	4·1	21·0	6·9
1927	1,018	984	11·9	1·0	46·6	4·3	29·5	3·4	21·1	6·0
1928	1,032	1,000	12·3	0·7	45·5	4·2	30·5	3·5	19·6	5·5
1929	1,031	999	10·4	0·6	41·8	4·1	27·6	3·5	19·2	6·5

	Pharynx.		Œsophagus.		Stomach.		Liver.		Gall-bladder.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	?	?	51·2	14·6	167·2	133·0	?	?	?	?
1911–20	10·8	3·0	60·6	16·5	186·4	139·0	87·1	98·0	6·0	11·6
1926	13·1	3·1	65·4	17·8	222·2	163·2	61·2	59·8	9·1	17·7
1927	13·2	2·8	60·7	18·0	229·0	157·0	55·8	52·1	8·3	17·6
1928	12·6	2·9	64·3	18·7	227·4	161·5	51·8	52·6	9·5	16·9
1929	13·8	2·8	62·3	18·3	237·2	164·6	52·3	50·6	9·4	17·6

	Mesentery and Peritoneum.		Intestine.		Rectum.		Ovary and Fallopian Tube.		Uterus.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	8·2	15·8	63·5	72·3	79·8	55·9	—	19·2	—	?
1911–20	6·0	12·0	96·8	109·2	93·6	59·3	—	24·3	—	174·4
1926	5·6	9·3	131·5	135·4	107·2	59·7	—	35·7	—	156·4
1927	4·8	7·3	132·0	131·8	105·7	60·3	—	38·9	—	155·1
1928	5·8	7·3	132·5	138·5	105·7	58·0	—	39·2	—	154·9
1929	4·4	7·2	134·3	138·6	108·0	58·3	—	40·8	—	150·3

	Breast.		Rodent Ulcer.		Penis.		Scrotum.		Other Skin.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	1·5	158·4	?	?	?	—	?	—	?	?
1911–20	1·6	170·8	6·7	4·3	6·6	—	2·4	—	17·6	10·9
1926	1·7	184·3	7·5	4·8	6·9	—	2·7	—	18·1	9·3
1927	1·6	193·5	6·5	5·2	6·4	—	3·0	—	18·8	10·3
1928	1·9	196·2	9·0	5·7	6·1	—	3·1	—	18·2	9·9
1929	1·8	195·7	9·5	5·0	5·7	—	2·7	—	18·2	10·7

	Larynx.		Lung.		Pancreas.		Kidney and Suprarenals.		Bladder.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	?	?	10·2	7·0	14·5	11·8	8·4	7·6	?	?
1911–20	23·9	6·0	12·7	7·0	16·7	13·1	9·1	7·2	28·2	9·7
1926	33·5	7·3	23·3	9·2	26·0	21·2	11·4	8·8	30·0	11·1
1927	31·7	6·9	26·8	9·7	30·3	20·4	12·2	9·6	30·5	11·6
1928	31·8	7·6	32·0	10·4	28·8	21·0	12·5	9·0	32·0	11·9
1929	31·4	7·6	33·4	11·9	30·3	20·0	13·2	9·6	32·3	12·3

	Prostate.		Testis.		Bones.		Mediastinum.	
	Males.	Females.	Males.	Females.	Males.	Females.	Males.	Females.
1901–10	11·8	—	?	—	?	?	8·1	4·5
1911–20	26·5	—	4·9	—	15·7	12·0	9·2	4·6
1926	47·9	—	5·2	—	17·3	13·1	13·3	6·0
1927	47·8	—	7·1	—	18·1	11·7	12·9	6·0
1928	53·8	—	6·3	—	18·6	14·6	13·3	5·4
1929	56·4	—	5·2	—	17·6	14·6	12·1	5·6

Œsophagus.—The rate for each sex has fallen in 1929, but is still in excess of that for 1911–20 which in turn exceeded 1901–10.

Liver.—The recent tendency of this rate to fall, presumably from increasing reference of secondary growths to their primary seat, has been replaced by a slight rise for males in 1929, though for females the fall continues, their rate in 1929 being only 52 per cent. of that in 1911–20.

Gall-bladder.—Mortality is, as usual, in great excess (87 per cent.) for females. The similar female excess of 123 per cent. shown for gall stones in Table 5A furnishes a probable explanation.

Intestine.—Increase continues steadily and rapidly for both sexes, the rate for each being now approximately double that in 1901–10. Much of this increase may well be due to better diagnosis.

Rectum.—Increase is much less rapid for this accessible portion of the intestine. Recent mortality is returned as almost twice as great for males as females.

Ovary and Fallopian tube.—This rate continues to increase very rapidly, that for 1929 being the highest in the table. To some extent this may be a consequence of the fall in the birth-rate, ovarian cancer being much commoner in single women.

Uterus.—The steady fall of earlier years was continued in 1929, the rate of 150·3 being the lowest in the table, and only 86 per cent. of that for 1911–20. No other site of similar importance shows such a decline for either sex. Improvement in treatment may be a factor of special importance in this case.

Breast.—Although the rate for females fell slightly in 1929 the general tendency of late years has been towards increase. For this also the fall in the birth-rate may be partly responsible, cancer of the breast, as of the ovary, chiefly affecting single women. Otherwise it might have been expected that the more thorough methods of surgical removal now practised would have lessened mortality for this most accessible site.

Skin.—There is some increase for females, but not for males. For both sexes the rate remains much as in 1911–20. Rodent ulcer continued to increase for males, but the rates for both penis and scrotum fell in 1929.

Lung.—The rapid increase of recent years was continued for each sex in 1929. No other site except the prostate records so great an increase for either sex as that of 227 per cent. for lung cancer in males since 1901–10.

Prostate.—Here the increase since 1901–10 amounts to no less than 378 per cent. But the very extent of the increase suggests doubt of its genuineness. It may be that many deaths now ascribed to cancer of the prostate would in 1901–10 have been ascribed simply to prostatic hypertrophy.

50. Tumours not returned as malignant.—As in other recent years all deaths from tumours not definitely stated to be malignant have been assembled in Table LII. These numbered 3,024, the tumour being returned as benign in 1,735 instances, and its nature in the remaining 1,289 being unstated. "Adenoma" of the prostate is classed to No. 135, diseases of the prostate, rather than to this heading because the deaths so returned seem to be of the nature of prostatic hypertrophy. They increased from 32 in 1911 to 288 in 1929. Such a rapid increase suggests change in medical nomenclature rather than in incidence of the disease. A similarly rapid increase for deaths from thyroid tumour, from 11 (8 benign and 3 unstated) in 1911 to 75, including 72 from adenoma, in 1929, is probably due to the same cause. Other sites of rapid increase of late years include the pituitary gland,

Table LII.—England and Wales, 1929 : Deaths attributed to Tumours not returned as Malignant.

Part affected.	All Ages. M.	F.	0- M.	F.	15- M.	F.	35- M.	F.	45- M.	F.	55- M.	F.	65- M.	F.	75- M.	F.
Tumours classed with other disease of organ affected.																
2. Cerebral tumour	626	613	72	45	116	115	114	118	148	162	115	113	52	44	9	16
Cholesteatoma	3	1	—	1	2	—	1	—	—	—	—	—	—	—	—	—
Cyst	14	17	2	2	4	4	4	4	4	3	—	4	—	—	—	—
Fibroma	2	3	—	—	—	1	—	1	1	—	—	—	—	—	1	1
Neurofibroma	1	3	—	—	—	1	—	2	—	—	1	—	—	—	—	—
Angioma	2	3	—	—	2	1	—	1	—	1	—	—	—	—	—	—
Psammoma	2	3	—	—	—	1	—	—	—	1	1	1	1	—	—	—
Glioma	154	138	21	10	27	30	33	27	34	35	31	24	7	9	1	3
Other benign	5	4	1	1	1	2	1	—	1	1	1	—	—	—	—	—
Nature unstated	443	441	48	31	80	75	75	83	108	121	81	84	44	35	7	12
135. Prostate	303	—	—	—	—	—	—	—	6	—	51	—	128	—	118	—
Adenoma	288	—	—	—	—	—	—	—	6	—	47	—	121	—	114	—
Fibroadenoma	8	—	—	—	—	—	—	—	—	—	2	—	4	—	2	—
Fibroid	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Fibroma	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Myoadenoma	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—
Fibromyoma	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
7. Ovarian tumour	—	312	—	—	—	42	—	30	—	62	—	58	—	67	—	53
Cyst	—	274	—	—	—	39	—	27	—	51	—	51	—	60	—	46
Papilloma	—	4	—	—	—	1	—	1	—	1	—	1	—	—	—	—
Other benign	—	9	—	—	—	1	—	—	—	3	—	3	—	1	—	1
Nature unstated	—	25	—	—	—	1	—	2	—	7	—	3	—	6	—	6
9. Uterine tumour	—	379	—	—	—	18	—	110	—	143	—	42	—	37	—	29
Fibroid, Fibromyoma, Myoma	—	360	—	—	—	16	—	106	—	139	—	39	—	35	—	25
Polypus	—	12	—	—	—	1	—	4	—	4	—	2	—	—	—	1
Cystic disease	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—
Nature unstated	—	6	—	—	—	—	—	—	—	—	—	1	—	2	—	3
141.2. Other female genital organs	—	9	—	—	—	3	—	4	—	1	—	1	—	—	—	—
Broad ligament, cyst	—	7	—	—	—	3	—	3	—	—	—	1	—	—	—	—
,, ,, fibroid	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
,, ,, nature unstated	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
Tumours not classed with other disease of organ or part affected.																
Pituitary gland .. Adenoma	6	3	—	—	2	1	2	1	2	—	—	1	—	—	—	—
Other benign	2	2	—	—	—	2	—	—	2	—	—	—	—	—	—	—
Nature unstated	13	6	—	2	7	2	6	—	—	1	—	1	—	—	—	—
Pineal Body .. Cyst	—	2	—	—	—	—	—	2	—	—	—	—	—	—	—	—
Nature unstated	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	—
Thyroid .. Adenoma	10	62	—	—	—	3	1	4	1	10	4	19	4	19	—	7
Other benign	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
Nature unstated	—	2	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Spinal cord .. Fibroma	2	1	—	—	1	1	1	—	—	—	—	—	—	—	—	—
Glioma	3	3	1	1	—	2	—	—	—	—	2	—	—	—	—	—
Other benign	4	2	1	—	2	1	—	—	1	—	—	1	—	—	—	—
Nature unstated	6	6	—	—	—	1	1	1	2	1	1	3	2	—	—	—
Ear .. Cholesteatoma	2	1	—	—	2	1	—	—	—	—	—	—	—	—	—	—
Other benign	1	1	—	—	—	—	1	—	—	—	—	1	—	—	—	—
Nose .. Polypus	6	4	—	—	1	1	2	—	1	2	—	1	1	—	1	—
Other benign	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
Nature unstated	1	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—
Larynx .. Papilloma	3	1	2	1	—	—	—	—	—	—	—	—	1	—	—	—
Other benign	2	1	—	—	1	—	—	—	—	—	—	1	1	—	—	—
Nature unstated	2	—	—	—	—	—	—	—	—	—	—	—	2	—	—	—
Mediastinum .. Non-malignant	1	3	1	—	—	2	—	—	—	—	—	—	—	1	—	—
Nature unstated	68	29	—	—	—	1	6	4	16	6	23	9	20	8	3	1
Lung .. Non-malignant	1	1	1	—	—	—	—	—	—	—	—	—	—	1	—	—
Nature unstated	34	11	—	—	—	—	4	1	7	2	11	6	8	2	4	—

Table LII.—England and Wales, 1929 : Deaths attributed to Tumours not returned as Malignant—*continued*.

Part affected.	All Ages. M	F.	0– M	F.	15– M	F.	35– M	F.	45– M	F.	55– M	F.	65– M	F.	75– M	F.
50. Tumours not classed with other disease of organ or part affected—contd.																
Parotid .. .. Nature unstated	4	5	—	—	—	—	1	—	2	1	1	2	—	—	—	2
Intestine .. Adenoma..	2	1	—	—	—	—	1	—	—	—	—	1	1	—	—	—
Fibroid ..	1	2	—	—	—	1	—	—	—	—	—	1	—	—	1	—
Polypus ..	7	8	—	1	1	2	—	2	1	—	2	1	3	2	—	—
Other benign	2	4	—	1	—	2	—	—	—	—	1	1	—	—	1	—
Nature unstated	20	31	—	—	—	—	—	—	3	4	5	4	9	5	3	18
Liver .. .. Non-malignant ..	2	1	—	1	1	—	—	—	—	—	—	—	1	—	—	—
Nature unstated	3	5	1	1	—	—	—	—	—	—	1	—	—	2	1	2
Gall bladder .. Nature unstated	2	3	—	—	—	—	1	—	—	1	—	—	—	1	1	1
Pancreas .. Cyst ..	3	7	—	—	—	—	—	—	1	2	1	3	1	1	—	1
Nature unstated	1	4	—	1	—	—	—	—	—	—	—	2	1	1	—	—
Kidney .. .. Non-malignant ..	3	3	—	—	—	—	1	1	1	2	1	—	—	—	—	—
Nature unstated	11	4	2	—	—	—	—	1	1	—	4	1	2	—	2	2
Bladder .. .. Papilloma	90	33	—	—	2	—	2	1	14	3	21	7	22	9	29	13
Polypus ..	4	—	1	—	—	—	—	—	—	—	—	—	—	3	2	—
Other benign	3	—	—	—	—	—	—	—	1	—	—	—	—	—	2	—
Nature unstated	6	3	—	—	—	—	—	—	—	—	—	1	4	2	2	—
Prostate .. .. Non-malignant ..	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Nature unstated	3	—	—	—	—	—	—	—	—	—	1	—	1	—	1	—
Breast .. .. Non-malignant ..	—	7	—	—	—	—	—	—	—	2	—	1	—	2	—	2
Jaw .. .. Non-malignant ..	—	2	—	—	—	—	—	—	—	1	—	1	—	—	—	—
Nature unstated	2	—	—	—	—	—	—	—	—	—	—	—	—	—	2	—
Spine .. .. Non-malignant ..	1	2	—	—	—	—	—	—	—	2	—	—	—	—	1	—
Nature unstated	8	1	—	—	1	—	1	—	2	—	2	1	2	—	—	—
Neck .. .. Cyst ..	3	—	1	—	—	—	—	—	—	—	—	—	1	—	1	—
Other benign	1	1	—	—	—	—	—	1	—	—	—	—	1	—	—	—
Nature unstated	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
Thorax .. .. Non-malignant ..	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
Nature unstated	7	1	—	—	—	—	1	—	1	—	4	1	1	—	—	—
Abdomen .. Cyst ..	1	3	—	1	1	—	—	—	—	—	—	—	—	1	—	1
Other benign	—	5	—	—	—	—	—	—	—	1	—	3	—	—	—	1
Nature unstated	10	19	1	1	—	—	—	—	1	2	2	4	2	1	4	11
Other sites .. Non-malignant ..	32	36	2	6	5	4	3	2	5	8	10	9	1	3	6	4
Nature unstated	22	16	2	2	3	—	2	—	2	—	5	2	4	5	4	6
Site not stated .. Non-malignant ..	3	1	—	—	2	—	—	—	—	—	1	1	—	—	—	—
Nature unstated	1	1	1	—	—	—	—	—	—	—	—	1	—	—	—	—
Total (50)	431	351	18	19	34	27	37	21	67	52	104	94	102	65	69	73
Total, all tumours	1360	1664	90	64	150	205	151	283	221	420	270	308	282	213	196	171
,, benign tumours ..	690	1044	35	26	57	125	53	191	76	272	129	182	178	142	162	106
,, nature unstated ..	670	620	55	38	93	80	98	92	145	148	141	126	104	71	34	65

lung and intestine. Deaths ascribed to pituitary tumour have grown from 7 in 1913, to 32 in 1929. Deaths from tumour of the lung increased from numbers ranging between 11 and 21 during 1912–19 to 64 in 1927, since then falling to 47 (2 benign and 45 unstated) in 1929. Like lung cancer, which also increased rapidly at the same time (Table LI), they affect males much

more than females. Deaths from intestinal tumour have increased from 27 (10 benign and 17 unstated) in 1911, when they were first distinguished, to 78 (27 benign and 51 unstated) in 1929.

57. **Diabetes.**—The deaths allocated to this disease numbered 5,628, 2,306 of males and 3,322 of females, corresponding to standardized death-rates of 95 for males and 111 for females. This rate has been in excess for females in each year from 1923 onwards, whereas before that date excess for males was an invariable rule, though its amount had long been decreasing.

The rate for each sex is higher than in 1928, that for males having increased from 91 to 95 per million and that for females from 101 to 111. The rate for males is the highest since 1922 (101) and that for females is higher than in any year since 1910, and higher than any recorded decennial rate.

Table LIII.—England and Wales : Mortality from Diabetes in 1920–22 and in subsequent years.

	Standardized Rates.			0–	15–	25–	35–	45–	55–	65–	75–
	All ages	0–55	55–								

Death-Rates per Million Living.

	All ages	0–55	55–	0–	15–	25–	35–	45–	55–	65–	75–
Males :—											
1920–22 ..	93·7	47·9	477·5	14	42	60	69	133	309	661	772
1923 ..	89·7	38·0	523·6	11	33	48	60	99	322	744	876
1924 ..	86·0	34·5	517·8	9	29	38	52	110	322	696	944
1925 ..	81·4	32·0	496·2	11	22	43	43	93	286	698	928
1926 ..	86·1	32·8	533·8	13	28	36	48	90	325	741	950
1927 ..	87·8	32·2	554·4	11	31	41	40	84	330	767	1,025
1928 ..	91·1	30·2	602·5	13	25	33	38	91	331	898	1,081
1929 ..	95·1	35·1	598·9	12	25	36	62	105	327	859	1,161
Females :—											
1920–22 ..	90·1	43·1	483·9	16	35	48	62	124	355	656	632
1923 ..	94·1	40·9	540·3	11	30	44	59	142	389	735	733
1924 ..	88·5	32·2	561·2	11	28	32	47	99	390	774	797
1925 ..	93·8	34·6	591·3	11	30	32	53	111	394	858	811
1926 ..	90·6	31·7	585·6	9	25	35	51	99	400	831	807
1927 ..	101·1	32·8	674·7	11	25	32	45	113	464	883	1,092
1928 ..	101·3	34·0	666·9	11	26	33	41	127	419	966	1,027
1929 ..	110·6	34·7	747·8	11	22	31	52	132	479	1,033	1,236

Mortality of Later Years per cent. of that in 1920–22.

	All ages	0–55	55–	0–	15–	25–	35–	45–	55–	65–	75–
Males :—											
1923 ..	96	79	110	79	79	80	87	74	104	113	114
1924 ..	92	72	108	64	69	63	75	83	104	105	122
1925 ..	87	67	104	79	52	72	62	70	93	106	120
1926 ..	92	68	112	93	67	60	70	68	105	112	124
1927 ..	94	67	116	79	74	68	58	63	107	116	133
1928 ..	97	63	126	93	60	55	55	68	107	136	140
1929 ..	101	73	125	86	60	60	90	79	106	130	150
Females :—											
1923 ..	104	95	112	69	86	92	95	115	110	112	116
1924 ..	98	75	116	69	80	67	76	80	110	118	126
1925 ..	104	80	122	69	86	67	85	90	111	131	128
1926 ..	101	74	121	56	71	73	82	80	113	127	128
1927 ..	112	76	139	69	71	67	73	91	131	135	173
1928 ..	112	79	138	69	74	69	66	102	118	147	163
1929 ..	123	81	155	69	63	65	84	106	135	157	196

Since 1922 the increase has been confined to the higher ages, as shown by the comparison in Table LIII of death-rates at various ages in subsequent years with those for 1920–22 (before the introduction of insulin in 1923).

Since the introduction of insulin in 1923 the mortality of males has fallen at all ages under 55 to an extent ranging from 10 per cent. at 35–45 to 40 at 15–35, or 27 per cent. altogether, and that of females of the same ages to a somewhat smaller extent. But the effect of this large reduction, which was shown in last year's Review to have been closely associated with the use of insulin, applying as it does only to the period subsequent to the introduction of the new remedy in 1923, has been entirely masked in the total death-rate by large increases of mortality for each sex at all ages over 55. In 1929 the rate for females of 75 and over was almost double that of the three years before the introduction of insulin, so, as there were large increases also at 55–65 and 65–75, the insulin reduction at 0–45 is converted into an increase of 23 per cent. in total mortality. In males the senile increase has been much smaller, and that at all ages therefore considerably less (1 per cent. as compared with 23) than for females.

As pointed out in previous Reviews (1925, 1928) the course of senile diabetes mortality has been closely related to the food supply, falling during the period of restriction in 1916–18, and rising almost continuously since this ended. It seems probable, therefore, that the mortality ascribed to diabetes at the higher ages is mainly of dietetic origin and that, so long as the conditions leading to its increase continue, the effect of insulin in reducing the mortality of early and middle life will continue to be masked in the total death-rate by the senile increase.

In the United States experience has been very similar in regard to increase of total mortality since the introduction of insulin, chiefly applying to females of the higher ages, with reduction for young males after insulin came into use.*

58 (a). **Pernicious Anæmia.**—As a new and effective treatment for this disease came into use in this country towards the close of 1927 the record of its recent mortality is of special interest at the present time.

First distinguished in tabulation from other forms of anæmia in 1920 these deaths yielded standardized rates in 1921 of 46 per million males and 60 per million females, which by 1926 had increased slightly to 47 and 61 (Table 5A). These rates fell immediately upon the introduction of the new liver treatment to 45, 30, and 32 in 1927–29 for males, and to 56, 39 and 39 for females. For each sex, therefore, an appreciable immediate fall is recorded, but without evidence of further progress. For

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* Statistical Bulletin of the Metropolitan Life Insurance Co., Jan. 1929.

each sex this fall has been greatest in middle life, about 45–55, and definitely smaller at 65–75, the age of highest mortality. In each year 1921–29 mortality has been higher for females Tab le 5A).

The death-rates per million living at each age are shown in Table LIV for each sex from 1921 onwards.

Table LIV.—England and Wales, 1921–29.—Mortality of Males and Females from Pernicious Anæmia. Death-rates per million living in each Year.

	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
					Males.				
All Ages (Standardized).	46	50	44	45	46	47	45	30	32
0–	5	5	4	4	4	4	5	5	4
5–	3	3	4	2	4	1	2	3	4
15–	6	8	7	9	7	8	5	7	4
25–	16	16	14	8	16	15	13	12	9
35–	38	51	43	32	33	42	32	17	20
45–	108	116	101	103	102	111	83	53	50
55–	236	240	212	226	224	219	236	126	141
65–	292	345	301	355	345	345	370	269	298
75–	204	177	188	174	236	199	230	187	269
					Females.				
All Ages (Standardized).	60	59	54	57	57	61	56	39	39
0–	7	8	5	6	5	7	6	6	4
5–	4	4	3	3	3	1	4	2	3
15–	13	10	12	12	15	16	10	10	8
25–	34	33	31	27	28	26	26	16	15
35–	77	69	64	70	62	74	60	38	36
45–	131	129	130	129	126	135	132	72	76
55–	269	259	227	254	244	264	242	178	170
65–	309	347	286	317	362	394	353	281	301
75–	174	226	191	216	200	202	224	187	224

66. Alcoholism.—This heading in the International List of causes of death excludes organic disease attributed to alcoholism, so, in order to obtain as complete information as possible with regard to mortality from over-indulgence in alcohol, all the deaths in certification of which any mention of alcohol appears are assembled in Table LV.   These deaths make up a total of 832, as against 134 classed to heading 66 as directly due to alcohol.

The former number is 31 less than that for 1928 but is higher than that for any other year since 1916, though the deaths attributed directly to alcoholism have fallen considerably (356 to 134) during the same period. But of late years the number of

Table LV.—England and Wales, 1929 : Deaths from or connected with Alcoholism.

		All Ages.		Under 25.		25–		35–		45–		55–		65–		75–	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
66.	Deaths attributed solely to alcoholism	85	49	2	—	5	3	20	9	25	16	19	10	12	9	2	2
	Deaths attributed to other causes in conjunction with alcoholism—																
11.	Influenza	24	5	—	—	—	—	7	—	8	4	7	—	1	1	1	—
21.	Erysipelas	2	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—
31.	Tuberculosis of the respiratory system	7	1	—	—	—	—	1	—	2	1	3	—	1	—	—	—
33.	Tuberculous peritonitis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
37.	Disseminated tuberculosis	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
38.	Syphilis	2	1	—	—	—	—	—	1	2	—	—	—	—	—	—	—
41.	Septicæmia	4	1	—	—	—	—	—	—	—	1	2	—	1	—	1	—
43–49	Cancer	2	1	—	—	—	—	—	—	—	—	2	—	—	—	—	1
52 (2)	Rheumatoid arthritis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
52 (3)	Gout	2	—	—	—	—	—	—	—	—	—	1	—	—	—	1	—
57.	Diabetes	4	1	—	—	—	—	—	—	1	—	2	1	1	—	—	—
65a	Leukæmia	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
68.	Veronal poisoning	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
69 (3)	Obesity	1	1	—	—	—	—	1	1	—	—	—	—	—	—	—	—
70 (2)	Encephalitis	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
71	Meningitis	—	2	—	—	—	—	—	—	—	—	—	1	—	1	—	—
72.	Tabes dorsalis	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
74.	Cerebral hæmorrhage, apoplexy, etc.	8	4	—	—	—	—	1	—	4	—	1	2	2	1	—	1
76.	General paralysis of the insane	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
77.	Korsakow's disease	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
78.	Epilepsy	7	—	—	—	2	—	2	—	1	—	2	—	—	—	—	—
82 (2)	Neuritis	12	17	—	—	—	—	—	4	4	4	6	6	2	3	—	—
83.	Cerebral softening	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
84 (3)	Disseminated sclerosis	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
88 (3)	Acute myocarditis	3	—	—	—	—	—	3	—	—	—	—	—	—	—	—	—
89.	Angina pectoris	2	1	—	—	—	—	—	—	—	1	—	—	2	—	—	—
90 (1–4)	Valvular disease of heart	14	3	—	—	—	—	2	1	5	—	4	—	2	2	1	—
90 (5)	Fatty heart	12	6	—	—	1	—	2	—	6	2	1	2	1	1	1	1
90 (6)	Cardiac dilatation	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
90 (7)	Other or unspecified myocardial disease	35	25	—	—	—	—	4	—	11	10	10	5	10	4	—	6
90 (8)	Auricular fibrillation	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—
90 (9)	Undefined heart disease	2	2	—	—	—	—	—	1	—	—	1	—	1	1	—	—
91 (b)	Arterio-sclerosis	12	5	—	—	—	—	—	1	3	1	4	1	5	2	—	—
91 (c)	Other diseases of the arteries	2	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—
93.	Œsophageal varix	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
99.	Bronchitis	16	3	—	—	—	—	2	—	8	1	4	1	2	1	—	—
100.	Broncho-pneumonia	9	3	—	—	1	—	2	1	2	1	3	1	1	—	—	—
101 (a)	Lobar-pneumonia	32	4	—	—	1	1	11	—	11	1	5	1	4	1	—	—
102.	Pleurisy	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
	Other diseases of the respiratory system	4	1	—	—	—	—	—	1	3	—	1	—	—	—	—	—
108 (1)	Pyorrhœa	3	—	—	—	—	—	—	—	—	—	2	—	1	—	—	—
108 (3)	Septic parotitis	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
109 (1)	Tonsillitis	2	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—
111.	Ulcer of the stomach and duodenum	4	—	—	—	—	—	1	—	1	—	1	—	1	—	—	—
112 (1)	Inflammation of the stomach	8	4	—	—	—	—	—	—	3	—	3	2	2	2	—	—
113–114	Diarrhœa and enteritis	2	2	—	—	—	—	1	—	1	—	—	2	—	—	—	—
118 (a)	Hernia	4	1	—	—	1	—	—	—	2	—	1	—	—	1	—	—
119.	Rectal stricture	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
122 (a)	Cirrhosis of the liver	175	83	—	—	2	2	15	11	53	23	58	27	38	16	9	4
123.	Cholelithiasis	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
125.	Acute pancreatitis	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
126.	Idiopathic peritonitis	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
128–129	Nephritis	15	12	—	—	—	—	1	3	4	2	6	1	2	4	2	2
131.	Other diseases of the kidney and annexa	1	1	—	—	—	—	—	—	—	—	1	1	—	—	—	—
133 (1)	Cystitis	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
135.	Enlarged prostate	1	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—
141 (2)	Ovarian abscess	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—
145.	Prolonged labour	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—
165–174	Suicide	4	1	—	1	—	—	1	—	—	—	3	—	—	—	—	—
182.	Accidental drowning	3	—	1	—	—	—	1	—	—	—	1	—	—	—	—	—
185.	Injury by fall	18	4	—	—	3	—	1	—	3	3	7	—	4	1	—	—
188.	Injury by crushing (vehicles, railway, etc.)	4	—	—	—	—	—	—	—	2	—	2	—	—	—	—	—
	Other violence	12	6	—	—	2	—	2	1	1	2	4	1	3	2	—	—
	Total	576	256	3	1	19	6	83	36	174	74	176	69	103	53	18	17

deaths from other causes specified as of alcoholic origin has tended to increase, especially since the introduction of a new form of death certificate in 1927. From 384 in 1926, the last complete year in which the old form of certificate was in use, these deaths increased to 644 in 1927, to 755 in 1928 and 698 in 1929. Thus the increase in the total for Table LV which also has occurred especially since 1926, may be largely a consequence of increased candour in certification, promoted by the new form of certificate, and possibly by its transmission under cover to the registrar.

Although the conditions of medical certification can scarcely be expected to admit of a full and reliable return of deaths due, in part or altogether, to alcoholism, experience has shown that the figures in Table LV and its predecessors have in the past fluctuated in remarkable harmony with other indices of alcoholic intemperance, and are thus not without value as indicative of at least the relative extent of this form of mortality in different years, even though they cannot be taken as measuring it absolutely. During the past half century the mortality rates corresponding to Table LV and its predecessors have fluctuated in close correspondence with the records of consumption of alcohol. This comparison is made in Diagram II, in which the crude mortality per million living from various causes of death associated with alcoholism is compared year by year, from 1871 onwards, with consumption of alcohol, plotted as millions of gallons of proof spirits retained for home consumption in each year.

The indices of mortality from alcoholism employed are stated in Table LVI, together with the spirits consumption record, derived from the Statistical Abstract for the United Kingdom. Before 1911 deaths ascribed to alcoholism were referred to the heading " Alcoholism and Delirium Tremens," and from 1871 to 1910 the corresponding death-rates are plotted in the diagram. After the International List of Causes of Death came into use in 1911, this record ceased to be available, and for it there has been substituted the series of death-rates derivable from the totals of deaths in Table LV and corresponding tables back to 1911. The other forms of mortality plotted for comparison with the record of consumption are, as stated in Table LVI, cirrhosis of the liver (not returned as alcoholic), and overlying of infants (deaths per 1,000 births). It is not suggested that either of these forms of mortality is exclusively due to alcoholism, but the association seemed likely to be sufficiently close to make the comparison with consumption worth while, and the diagram shows how far this has proved to be the case.

The diagram shows that during the final quarter of the nineteenth century mortality from alcoholism, whether gauged by deaths ascribed to " alcoholism and delirium tremens," to cirrhosis of the liver, or by infantile deaths from suffocation in

Table LVI. England and Wales, 1871–1929—Comparison of Mortality from and Consumption of Alcohol in each Year.

Year.	Mortality.				Consumption.
	Crude Death-rates per Million Living, Both Sexes.				Thousands of Proof Gallons of potable Spirits retained for Home Consumption (in the United Kingdom.)
	" Alcoholism and Delirium Tremens."	Deaths from or connected with Alcoholism.	Cirrhosis of Liver (not returned as Alcoholic.)	Overlying (Deaths per 1,000 Births.)	
1871 ..	32	—	—	1·43	—
1872 ..	31	—	—	1·39	—
1873 ..	33	—	—	1·42	—
1874 ..	44	—	—	1·39	—
1875 ..	48	—	100	1·54	—
1876 ..	46	—	105	1·44	41,459
1877 ..	46	—	112	1·42	40,529
1878 ..	45	—	113	1·47	39,815
1879 ..	37	—	110	1·56	37,494
1880 ..	37	—	108	1·45	36,960
1881 ..	47	—	116	1·54	37,047
1882 ..	50	—	116	1·52	36.869
1883 ..	48	—	120	1·58	36,979
1884 ..	47	—	124	1·49	36,120
1885 ..	49	—	122	1·49	34,516
1886 ..	51	—	127	1·57	34,125
1887 ..	52	—	120	1·65	34,101
1888 ..	52	—	119	1·81	34,138
1889 ..	55	—	121	1·80	35,791
1890 ..	70	—	124	2·00	38,375
1891 ..	71	—	125	2·12	39,144
1892 ..	67	—	122	2·07	39,467
1893 ..	73	—	121	2·00	37,691
1894 ..	61	—	116	2·01	37,506
1895 ..	67	—	118	2·13	39,043
1896 ..	71	—	122	2·06	40,076
1897 ..	77	—	133	2·02	40,960
1898 ..	78	—	132	2·05	41,708
1899 ..	90	—	142	2·05	44,415
1900 ..	113	—	144	2·03	45,889
1901 ..	96	—	132	1·84	45,210
1902 ..	84	—	123	1·93	44,078
1903 ..	77	—	118	1·85	41,886
1904 ..	70	—	118	1·94	40,732
1905 ..	65	—	118	1·77	39,332
1906 ..	66	—	112	1·74	39,264
1907 ..	63	—	112	1·81	39,983
1908 ..	55	—	104	1·64	38,079
1909 ..	47	—	100·	1·49	31,063
1910 ..	42	—	90	1·43	29,266
1911 ..	45	50	94	1·39	30,687
1912 ..	—	52	96	1·54	30,527
1913 ..	—	59	100	1·39	31,794
1914 ..	—	59	102	1·40	31,660
1915 ..	—	48	92	1·25	35,002
1916 ..	—	32	76	0·94	28,144
1917 ..	—	20	59	1·05	18,534
1918 ..	—	10	44	0·84	15,108
1919 ..	—	12	38	0·76	21,699
1920 ..	—	19	43	0·62	22,125
1921 ..	—	17	47	0·59	18,532
1922 ..	—	16	46	0·57	16,903
1923 ..	—	15	42	0·55	14,744
1924 ..	—	14	41	0·59	14,707
1925 ..	—	13	44	0·57	14,332
1926 ..	—	13	44	0·57	13,144
1927 ..	—	19	41	0·60	13,141
1928 ..	—	22	40	0·59	12,633
1929 ..	—	21	38	0·57	—

Diagram II.

England and Wales, 1871—1929—Comparison of Mortality from and Consumption of Alcohol in each year.
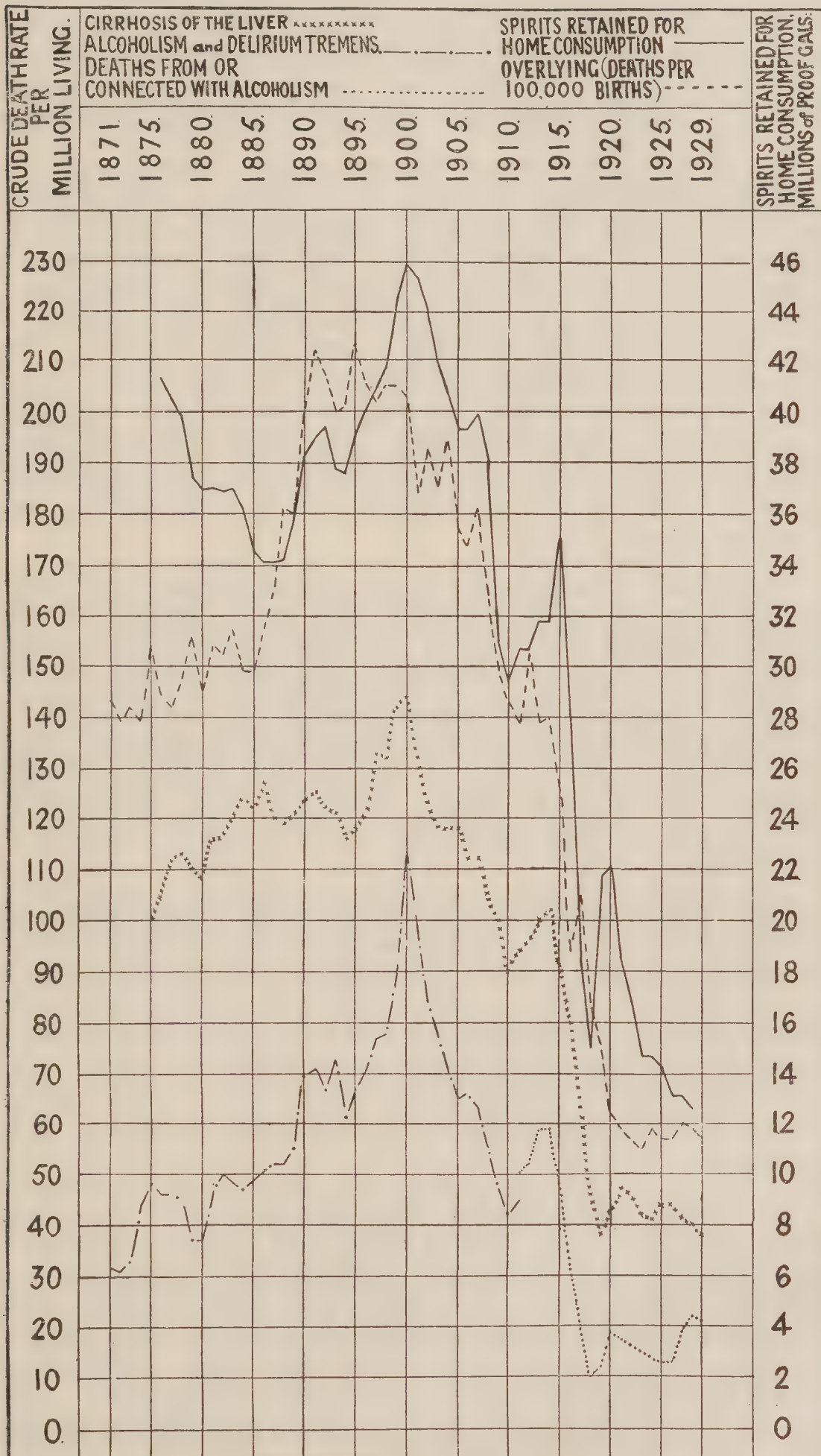
bed by their (presumably often drunken) parents, was rising to reach a maximum at or about the end of the century, generally in the year 1900, and that since then all of these rates have tended to fall. The rate of "alcoholism and delirium tremens" cannot, indeed, be stated after 1911, but may be regarded as prolonged by the similarly comprehensive rate derivable from the annual tabulation of "deaths from or connected with alcoholism" (Table LV), which happens for 1911 almost to coincide with it.

The diagram provides a ready explanation of this harmony of mortality increase up to 1900 by showing a corresponding maximum in that year for spirits consumption. After this the course of the fall in consumption is very faithfully followed by those of all the mortality indices used. Thus in 1910–15, consumption definitely rose, and at the same time the fall for all three mortality curves plotted was temporarily arrested. After 1915, special war measures of restriction brought about a large fall in consumption during the three following years, succeeded by a temporary rise after 1918. The 1915–18 fall is closely followed by each of the three mortality curves, but not so much the succeeding temporary rise, which may be attributable largely to replenishment of stocks.

During the half-century covered, the diagram brings out a very close correspondence between the consumption of alcohol and the mortality attributed to it, which is especially noticeable in regard to the abrupt changes in consumption during the war. It seems evident therefore that the death-rates plotted are not without value as indices of the varying extent of mortality caused by alcoholism, since a rise or fall in the amount of alcohol consumed has been so closely associated with corresponding movement of all the death-rates used to test the degree of association.

The quantity of spirits retained for home consumption each year has been chosen as the measure of the extent of alcohol consumption merely because of its availability and convenience for this purpose and not because of any special significance attributed to the use of alcohol in this form rather than in others. But of course if spirit drinking is more injurious to health than that of malt liquor this fact can only increase the usefulness of spirits consumption for comparison with mortality from alcoholism.

74. **Cerebral Hæmorrhage, Apoplexy, etc.**—The number of deaths assigned to this heading which had shown a substantial decrease in 1927 and 1928 when compared with the immediately preceding years, increased in common with other diseases of later life, to 25,215 (males 11,101, females 14,114) (Table 4). The true incidence of this disease in the last three years is somewhat masked by increased precision in certification due in some measure to the introduction in 1927, of the new form of medical

certificate which has encouraged statement of the disease causing the hæmorrhage. But from the increase in the number of deaths in 1929 certified as due to cerebral hæmorrhage without statement of its cause, it may be assumed that some of the reduction in 1928 was due to the milder winter of that year, the deaths occurring in the first three months of 1928, being 21 per cent. less than the number in the corresponding period of 1929, while the number of deaths during the remainder of the year was slightly greater.

Greater precision in certification has undoubtedly resulted in a transfer of deaths from cerebral hæmorrhage to arterio-sclerosis, myocardial disease and chronic nephritis, three of the chief diseases with which cerebral hæmorrhage is most frequently associated in the certification of causes of death. It is difficult to estimate the extent of the transfer to myocardial disease and chronic nephritis, but any vitiation of comparability with past records in respect of arterio-sclerosis can to a great extent be overcome by adding the deaths from cerebral hæmorrhage associated with arterio-sclerosis (No. 91b : 1), separately tabulated since 1921, to those from cerebral hæmorrhage without statement of cause.

The crude death-rate from the combined headings (Nos. 74 and 91b : 1) has shown an upward tendency for both sexes, the rates in 1929 (872 for males and 931 for females) being the highest recorded during the nineteen years for which approximately comparable data are available. When standardized, however, to eliminate the effect of the increasing age of the population, the male rate of 663 and the female rate of 594 per million are lower than in several previous years.

For the age-group 45–55, the earliest at which the mortality from this cause becomes significant, the female death-rate has exceeded that for males in every year from 1911 onwards ; at the age-groups 55–65, 65–75 and 75 years and upwards, the male rate has with few exceptions been in excess of the female, the excess increasing with advancing age.

Compared with 1928, the male death-rates at the later ages show substantial increases but it is remarkable that in spite of the adverse climatic conditions prevailing in 1929, the female rates at 45–55, and 65–75 are below those recorded in 1928 ; at 55–65 the rates are almost equal but at 75 and upwards the rate in 1929 was the highest recorded for both sexes during the nineteen years 1911–1929.

The extent to which this form of mortality is restricted to later life is indicated in the following statement of deaths from cerebral hæmorrhage (74 and 91b: 1) per cent. of all deaths at various ages in each sex.

	All ages.	0–	15–	25–	35–	45–	55–	65–	75–
Males ..	6·13	0·01	0·20	0·59	1·44	3·75	7·64	10·87	10·67
Females	7·32	0·03	0·12	0·60	1·97	6·05	9·45	11·45	10·64

Negligible as a risk in early life, cerebral hæmorrhage causes about 10 per cent. of all deaths at each age over 55. The general excess of this proportion for females except at the ages of child-bearing is in interesting contrast to their somewhat lower mortality.

87–90. **Heart Diseases.**—The number of deaths allocated to this cause, 96,467, 45,018 of males and 51,449 of females, was as usual larger than for any other item in the list of causes.

For each sex these numbers were considerably the highest allocated to this cause since the commencement of comparable records in 1901, and the crude death-rates per million (2,373 for males and 2,493 for females) were also the highest recorded for each sex during the present century. But Table 5A shows that though these rates are reduced on standardization to 1835 for males and 1658 for females, they still remain in this form the highest for each sex during 1919–29.

As it has been pointed out in previous Reviews (1926, 1927, 1928) that the recent increase of crude mortality (Table 5) from heart diseases is due partly to the increasing age of the population and partly to rapid increase of the record of myocardial degeneration in certification of the deaths of old people, Table LVII has been prepared to show how the rates quoted above for 1929 have been affected by these influences, and what, but for them, would have been the course of recent mortality from diseases of the heart. This has been done by ascertaining and deducting from the standardized death-rate (Table 5A) that portion of it for which myocardial disease (90 (7)) at ages over 65 was responsible in each year 1921–29.

It will be seen that the increase of crude mortality (Table 5) from 1951 per million in 1928 to 2,436 in 1929 is much reduced when allowance is made for the factors mentioned, an increase of 480 per million for males being converted into one of 124, and an increase of 489 for females into one of 103 only when the increase due to ageing is wiped out by standardization, and that due to increased specification of senile myocarditis by omitting these deaths from the comparison.

The table also shows how rapid has been the increase for each sex of mortality ascribed to senile myocarditis.

The contribution of the latter to total heart disease mortality has changed as follows during these nine years :—

Deaths in Standard Million from Myocarditis, aged 65 years and upwards, per cent. of that from all Diseases of the Heart.

	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Males ..	13	15	17	20	24	26	28	31	38
Females ..	13	15	17	19	23	26	28	31	37

Table LVII.—Deaths in Standard Million from Heart Diseases
(87–90), at all ages, and from " Other or Unspecified Myo-
cardial disease " (90(7)) at ages over 65 in each year 1921–29 ;
also the mortality in each year from Heart Diseases other
than senile myocarditis.

	Males.			Females.		
	87–90. All Heart Diseases.	90 (7). " Other or Unspecified myocardial disease " Aged 65 and upwards.	Col. 1 less col. 2.	87–90 All Heart Diseases.	90 (7) "Other or Unspecified myocardial disease " Aged 65 and upwards.	Col. 4 less col. 5.
	(1)	(2)	(3)	(4)	(5)	(6)
1921 ..	1,203	154	1,049	1,107	145	962
1922 ..	1,301	198	1,103	1,218	187	1,031
1923 ..	1,210	210	1,000	1,129	195	934
1924 ..	1,267	254	1,013	1,181	229	952
1925 ..	1,322	313	1,009	1,220	278	942
1926 ..	1,298	337	961	1,188	304	884
1927 ..	1,412	399	1,013	1,303	360	943
1928 ..	1,474	456	1,018	1,349	413	936
1929 ..	1,835	693	1,142	1,658	619	1,039
	Figures for subsequent years per cent. of those for 1921.					
1922 ..	108	129	105	110	129	107
1923 ..	101	136	95	102	134	97
1924 ..	105	165	97	107	158	99
1925 ..	110	203	96	110	192	98
1926 ..	108	219	92	107	210	92
1927 ..	117	259	97	118	248	98
1928 ..	123	296	97	122	285	97
1929 ..	153	450	109	150	427	108

But at all ages jointly myocardial disease (90(7)) has been an
increasing constituent of total heart diseases, as shown by the
following statement of the rates in Table 5A for 90 (7) per cent.
of the total for 87–90.

	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
Males ..	17	21	23	27	31	34	37	41	49
Females ..	17	20	22	25	30	33	35	39	47

The mortality from heart diseases being highest at the later
ages, it naturally shared in the abnormally high mortality of
elderly persons caused by the severe climatic conditions of the
first quarter of the year. Compared with the preceding year, the
deaths rose from 77,028 to 96,467 and of this increase of 19,439
deaths, no less than 13,207, or more than two-thirds was recorded
during the March quarter.

91(*b*). **Arterio-sclerosis.**—The deaths from this cause were first distinguished in 1911, when they numbered 3,675. In each successive year the number increased, reaching a total of 25,753 in 1928.

A change of such magnitude in medical terminology has naturally vitiated the comparability of certain other headings in the list of causes of death. The heavy incidence of the disease in persons of advanced age and the decline during the same period of the deaths assigned to senile decay, suggests that many of the deaths, which formerly would have been certified as due to the latter cause are now returned as due to arterio-sclerosis. The tendency to more precise certification has further increased the mortality by transference to this heading of deaths from cerebral hæmorrhage. Comparability has, however, further been disturbed, but in the contrary direction, by a change in classification, introduced in 1929. For some years past the term " cardiovascular degeneration " and the joint statement of arterio-sclerosis and cardiac or myocardial degeneration have appeared with increasing frequency on medical certificates. The former is assigned by international usage to heart disease, but the separate statement of the two diseases has, by the operation of the selective rules for joint causes, been assigned to the disease entered as primary on the medical certificate. In consequence of the increased frequency of the use of the compounded term (1,060 deaths in 1925 and 2,106 deaths in 1929) it was decided to assign both forms of statement to heart disease.

This change of practice accounts in great measure for the decline of the deaths assigned to arterio-sclerosis from 25,753 in 1928 to 20,987 in 1929. Had this change not been made it is probable that arterio-sclerosis, in common with other diseases of high mortality at the later ages, would have shared to a greater extent in the high mortality at these ages experienced during the first quarter of the year.

97–107. **Diseases of the Respiratory System.**—The total number of deaths allocated to these diseases was 83,351 or no fewer than 23,860 more than in 1928, which was the lowest total recorded for many years. The standardized death-rates, 2,258 per million for males and 1,670 for females, were the highest recorded since 1922 for males and since 1924 for females (Table 5A).

The monthly distribution of these deaths is compared in the following statement with the experience during the quin-quennium 1921-25, but as the deaths during October-December are not yet tabulated they have to be approximately estimated for these three months as a whole by deducting deaths occurring in January-September from the total registered during the year.

Diseases of the Respiratory System
Deaths per Day.

			1921–25.	1929.	1929 per cent. of 1921–25.
January	..	..	335	367	110
February	..	..	359	648	181
March..	..	..	332	561	169
April ..	..	..	274	215	78
May ..	..	..	194	171	88
June ..	..	..	135	109	81
July ..	..	..	108	98	91
August	..	..	93	79	85
September	..	..	105	81	77
October	..	.. }			
November	..	.. }	222	147	66
December	..	.. }			
Year ..	..	..	216	228	106

These figures show that compared with 1921-25 the excess was confined to the first quarter of the year reaching a maximum of 81 per cent. in the month of February. During this period, the air temperature was lower than in any year since 1895. (See section on meteorology at end of this volume). For the remaining nine months of the year the proportion of daily deaths was lower than in 1921-25 and declined rapidly from July to the end of the year.

Last year attention was drawn to the influence of meteorological conditions on the sex mortality from respiratory diseases, unfavourable conditions usually causing a proportionally higher increase in the female death-rate with a consequent decrease in the male-female mortality ratio and *vice-versa* when favourable conditions prevail.

Standardized Mortality (per Million) from Respiratory Diseases.

			(a) Males.	(b) Females.	Ratio (a) per 1,000 (b).
1921 ..	..	..	2,176	1,609	1,353
1922 ..	..	..	2,510	1,896	1,324
1923 ..	..	..	1,973	1,451	1,360
1924 ..	..	..	2,217	1,682	1,318
1925 ..	..	..	2,108	1,572	1,341
1926 ..	..	..	1,851	1,349	1,372
1927 ..	..	..	2,060	1,513	1,361
1928 ..	..	..	1,649	1,151	1,432
1929 ..	..	..	2,258	1,670	1,352

The rates for 1929 have been added to the above statement, published in the 1928 volume, and it will be seen that the experience in that year confirms the greater relative susceptibility of females to the meteorological causes of respiratory disease.

Compared with 1928 the male standardized mortality from the different forms of disease distinguished increased as follows :—broncho-pneumonia, 56 per cent, bronchitis, 34, pneumonia (undefined), 33, and lobar pneumonia, 20. As a consequence of these movements the share of bronchitis in total respiratory mortality (males) was less in 1929, at 32·5 per cent., while that from broncho-pneumonia at 35·2 was higher than in any previous year from 1911 onwards, the share of lobar pneumonia, 17·3 per cent., was, with a single exception, the highest during the same period, and that of " pneumonia " not otherwise defined (8·2 per cent.), the lowest. During these eighteen years the proportion assigned to bronchitis has varied from 325 to 451 per 1,000 ; that to broncho-pneumonia from 206 to 352 ; that to lobar pneumonia, from 95 to 197 ; and that to " pneumonia " so returned from 85 in 1928 to 178 in 1911 (204 in 1918). The practice of leaving the type of pneumonia responsible in each case unspecified is seen therefore to have decreased during 1911–28 from a maximum in the first of these years to a minimum in the last, if the exceptional conditions of the great influenza epidemic are excluded from consideration.

Apart from the increase in the mortality from broncho- and lobar pneumonia consequent on the decline of the deaths returned from pneumonia undefined, there is strong evidence to suggest a change in the medical conception of these diseases and bronchitis.

In the following statement the mortality by sex and age from all respiratory diseases and from bronchitis and pneumonia (all forms) is expressed as a percentage of that recorded in 1922—the year of highest influenza mortality during the previous nine years.

Cause.		All ages stand-ardized	0–	5–	15–	25–	35–	45–	55–	65–	75–
Bronchitis	M.	71·9	61·6	80·7	76·8	71·9	94·6	99·8	65·8	66·5	79·5
	F.	71·8	62·2	100·0	66·2	49·4	59·9	65·6	62·0	66·3	86·8
Pneumonia (all forms).	M.	104·2	99·3	124·8	97·6	87·0	107·0	128·9	105·6	106·9	122·9
	F.	102·5	98·6	113·9	107·0	86·1	104·7	101·7	99·6	112·6	132·3
All Respiratory Diseases.	M.	99·0	88·8	118·2	98·4	83·5	103·3	117·2	84·3	78·6	87·6
	F.	88·1	88·9	105·8	102·9	79·5	94·4	85·4	77·9	79·4	94·7

Although the meteorological conditions were more severe and the influenza mortality higher than in 1922, it will be seen that the mortality in 1929 from respiratory diseases as a whole was, with few exceptions, below that experienced in 1922 and at most ages the decline was greater in the female sex. The mortality from bronchitis was, with a single exception (females 5–15), below that of 1922 at every age group in each sex, while that from pneumonia was higher at all ages over 35 years, females 55–65 excepted. It is possible that some of the decrease in the mortality from bronchitis at 0–5 is due to transfer to pneumonia and at the ages past middle life to transfer to myocardial disease.

When comparison is made with earlier years, the mortality from respiratory disease is now lower than that experienced in the past under more favourable meteorological conditions than those of 1929.

129. **Chronic Nephritis.**—The increase of mortality attributed to this cause, noted for 1927 and 1928 as having followed steady reduction during the twelve previous years, has progressed further in 1929, the standardized rate for males rising from 271 to 297 per million, and for females from 213 to 237 (Table 5A). These rates, however, remain for each sex well below the maximum attained in 1913–15 (392 for males and 287 for females). The crude rates (Table 5) are subject to considerable reduction on standardization, as this form of mortality chiefly affects the increasing proportion of elderly persons in our population.

143–150. **The Puerperal State.**—The number of deaths assigned to pregnancy or childbirth was 2,787 (Tables 4, 17 and LXI), corresponding to a rate of 4·33 per 1,000 (live) births. Inclusion of the 960 deaths in Table LXIII, which were classified to non-puerperal headings, raises the proportion to 5·82 deaths stated to have been caused by, or associated with, pregnancy and childbirth for every 1,000 (live) births.

In addition to these deaths 67 others from criminal abortion were assigned to various forms of violence, *e.g.*, suicide, murder, etc., in accordance with the verdicts recorded by the coroners' juries. As these deaths resulted from illegal interference with the pregnancy, it has not been the practice to include them in the maternal mortality rate, but as their occurrence is of some importance, mention is now made of them to complete the record of deaths associated with abortion. Their inclusion with the other maternal deaths would raise the rate to 5·93 per 1,000 (live) births.

For comparison of the deaths definitely assigned to pregnancy and childbirth with those so classed for years prior to 1911 deduction is required of 165 deaths from puerperal nephritis and albuminuria (Table LXI), which before that date were not

distinguished as puerperal. The resultant rate of 4·07 deaths per 1,000 live births is compared in Table LVIII with similar rates for the preceding thirty-eight years, before which the comparability of the figures is doubtful.

Table LVIII.—England and Wales. Mortality of Women in or associated with Childbirth per Thousand Children born alive, 1891–1929.

Year.	Classification in use from 1911 onwards.				Classification in use before 1911.				Total Maternal Mortality.
	Puerperal Sepsis.	Other Puerperal causes.	Total Puerperal Mortality.	*Non-puerperal causes.	Puerperal Sepsis.	Other Puerperal causes.	Total Puerperal Mortality.	†Non-puerperal causes.	
1891–95 ..	—	—	—	—	2·60	2·89	5·49	—	—
1896–1900 ..	—	—	—	—	2·12	2·57	4·69	—	—
1901–05 ..	—	—	—	—	1·95	2·32	4·27	1·29	5·56
1906–10 ..	—	—	—	—	1·56	2·18	3·74	1·26	5·00
1911–15 ..	1·42	2·61	4·03	0·99	1·50	2·31	3·81	1·21	5·02
1916–20 ..	1·51	2·61	4·12	1·68	1·59	2·29	3·88	1·92	5·80
1921–25 ..	1·40	2·50	3·90	1·14	1·48	2·21	3·69	1·35	5·04
1911	1·43	2·44	3·87	1·04	1·52	2·15	3·67	1·24	4·91
1912	1·39	2·59	3·98	0·97	1·47	2·31	3·78	1·17	4·95
1913	1·26	2·70	3·96	0·91	1·34	2·37	3·71	1·16	4·87
1914	1·55	2·62	4·17	0·95	1·63	2·32	3·95	1·17	5·12
1915	1·47	2·71	4·18	1·09	1·56	2·38	3·94	1·33	5·27
1916	1·38	2·74	4·12	0·94	1·47	2·40	3·87	1·19	5·06
1917	1·31	2·58	3·89	0·95	1·39	2·27	3·66	1·18	4·84
1918	1·28	2·51	3·79	3·81	1·35	2·20	3·55	4·05	7·60
1919	1·67	2·70	4·37	1·93	1·76	2·36	4·12	2·18	6·30
1920	1·81	2·52	4·33	1·13	1·87	2·25	4·12	1·34	5·46
1921	1·38	2·53	3·91	1·09	1·46	2·25	3·71	1·29	5·00
1922	1·38	2·43	3·81	1·35	1·46	2·12	3·58	1·58	5·16
1923	1·30	2·51	3·81	1·01	1·38	2·22	3·60	1·22	4·82
1924	1·39	2·51	3·90	1·16	1·48	2·22	3·70	1·36	5·06
1925	1·56	2·52	4·08	1·07	1·62	2·24	3·86	1·29	5·15
1926	1·60	2·52	4·12	1·02	1·64	2·23	3·87	1·27	5·14
1927	1·57	2·54	4·11	1·32	1·63	2·20	3·83	1·60	5·43
1928	1·79	2·63	4·42	1·20	1·85	2·30	4·15	1·47	5·62
1929	1·80	2·53	4·33	1·49	1·83	2·24	4·07	1·75	5·82

* 960 deaths in 1929 (Table LXIV).
† 960 deaths in Table LXIV and 165 from puerperal nephritis and albuminuria.

It will be seen from Table LVIII that the mortality from puerperal sepsis remained almost stationary during the four years 1921–24 ; in 1925 it attained a higher level which was exceeded in the three following years and in 1929 it almost reached the exceptionally high rate of 1920. The mortality from other puerperal causes was lower than in 1928. The increase in the rate from non-puerperal causes was largely due to the prevalence of influenza—the maternal deaths associated with this disease having increased from 52 in 1928 to 155 in 1929.

Since the issue of the previous volume in this series, the Departmental Committee appointed by the Minister of Health has issued an Interim Report* which contains the result of an investigation into the causes of upwards of 2,000 maternal deaths and certain recommendations for the prevention of the high death-rate attributed to childbirth.

* Interim Report of the Departmental Committee on Maternal Mortality and Morbidity. H.M. Stationery Office, Kingsway, London, W.C.2. *Price* 2s.

Reliable statistics of stillbirths are now becoming available and as the total births, *i.e.*, live and stillbirths provide a closer approximation to the number of women exposed to the risk of dying from puerperal conditions than live births alone, the maternal mortality rate will in future be calculated on both bases, and will continue to be published on the two bases for a sufficient period to enable statistical continuity to be assured.

TABLE LIX. England and Wales. Mortality of Women in or associated with Childbirth per Thousand Children born alive, and per Thousand Total Births (Live born and Still born).

	Per 1,000 live births.					Per 1,000 total births.				
	Puerperal Sepsis.	Other puerperal causes.	Total puerperal mortality.	Non-puerperal causes.	Total maternal mortality.	Puerperal Sepsis.	Other Puerperal causes.	Total puerperal mortality.	Non-puerperal causes.	Total maternal mortality.
1928	1·79	2·63	4·42	1·20	5·62	1·72	2·52	4·25	1·15	5·39
1929	1·80	2·53	4·33	1·49	5·82	1·73	2·43	4·16	1·43	5·59

It will be observed that while the rates on the wider basis are obviously lower than those based on live births the ratio of the 1929 to the 1928 mortality remains unchanged.

Table LX.—Distribution throughout England and Wales of Mortality of Women in Childbirth, per Thousand Children Born Alive, distinguishing Septic and Other Causes, 1929.

—	North.	Mid-lands.	South.	Wales.	England and Wales.
Sepsis.					
London	—	—	1·88	—	1·88
County Boroughs ..	2·13	1·54	1·74	0·72	1·84
Other Urban Districts..	1·73	1·47	1·50	2·15	1·63
Rural Districts	2·32	1·72	1·83	2·37	1·96
All Areas	2·03	1·56	1·76	1·91	1·80
Other Causes.					
London	—	—	1·73	—	1·73
County Boroughs ..	2·76	2·22	1·97	4·14	2·57
Other Urban Districts..	3·07	2·28	2·03	3·88	2·64
Rural Districts	2·90	2·38	2·57	4·07	2·72
All Areas	2·88	2·29	1·99	3·99	2·53
All Causes.					
London	—	—	3·61	—	3·61
County Boroughs ..	4·89	3·76	3·71	4·87	4·41
Other Urban Districts..	4·81	3·75	3·53	6·03	4·27
Rural Districts	5·21	4·09	4·40	6·43	4·68
All Areas	4·91	3·84	3·75	5·90	4·33

The distribution throughout the country of the mortality ascribed to childbirth is outlined in Table LX.

As regards the distinction between town and country, a tendency may as usual be noted for mortality from sepsis to increase, and for that from other causes to decrease, with urbanization. The London rate has been lowest in the table for non-septic causes during ten of the eleven years, 1919–29, for which this table has been prepared, but its advantage for sepsis is confined to 1927 and 1928, before which the London septic rate was frequently above average.

As in seven of the ten preceding years the all puerperal causes rate for Wales in 1929 is the highest in the table for each class of area. During the years 1919–29 this rate for Wales has been uniformly above the average for England and Wales to an extent varying from 19 to 43 per cent. The Welsh excess in 1929, 36 per cent., is, as always, much greater for non-septic causes than for sepsis, though even for sepsis no exception has yet occurred (from 1919 onwards) to the rule of Welsh excess. For non-septic causes this amounts to 58 per cent. in 1929. For Wales as a whole, this rate (non-septic causes) is higher in 1929 than in nine of the ten previous years.

Table LXI gives particulars of deaths ascribed to the puerperal state with a statement of the civil condition of the deceased.

The records of cases of puerperal fever notified are collated with those of births and of deaths from this cause in Table LXII.

Table LXI.—England and Wales, 1929 : Deaths of Women Classed to Pregnancy and Childbearing.

Cause of Death.	All Ages.	Civil Condition.			Ages.						
		Single.	Married.	Widowed.	15–	20–	25–	30–	35–	40–	45 and upwards
143. (a) Abortion*	67	2	64	1	1	5	13	17	26	5	—
(b) Ectopic gestation	86	5	79	2	—	6	21	27	19	12	1
(c) *Other accidents of pregnancy:*—	*133*	*7*	*124*	*2*	*6*	*17*	*41*	*16*	*32*	*18*	*3*
Accidental hæmorrhage	21	—	21	—	—	7	3	5	4	2	
Ante-partum hæmorrhage	30	1	29	—	—	3	3	5	10	9	—
Chorea	12	2	10	—	2	6	4	—	—	—	—
Uncontrollable vomiting	54	2	50	2	3	7	21	6	13	4	—
Carneous mole	1	—	1	—	—	—	1	—	—	—	—
Hydatid mole	6	1	5	—	1	—	3	—	1	1	—
Incarcerated gravid uterus	1	—	1	—	—	—	—	—	—	—	1
Retroverted gravid uterus	2	1	1	—	—	—	1	—	1	—	—
Rupture of a gravid uterus	1	—	1	—	—	—	—	1	—	—	—
Hydramnios	4	—	4	—	—	—	1	1	2	—	—
"Pregnancy" unqualified	1	—	1	—	—	1	—	—	—	—	—
144. *Puerperal hæmorrhage :*—	*313*	*15*	*294*	*4*	*3*	*24*	*67*	*72*	*95*	*48*	*4*
Placenta prævia	159	8	148	3	1	13	22	39	54	27	3
Adherent or retained placenta	67	3	63	1	1	7	21	11	18	8	1
Accidental hæmorrhage	12	1	11	—	—	1	2	4	2	3	—
Post partum hæmorrhage	75	3	72	—	1	3	22	18	21	10	—
145. *Other accidents or abnormalities of childbirth:*—	*299*	*12*	*286*	*1*	*7*	*40*	*67*	*80*	*69*	*33*	*3*
Contracted pelvis	83	6	77	—	5	15	21	24	12	5	1

* Besides these 67 deaths from abortion there were 238 (Single 27, Married 205 and Widowed 6) others from abortion with sepsis, which in accordance with the international scheme, are classified to puerperal sepsis, and 67 (Single 22, Married 40 and Widowed 5) from criminal abortion (see Table 22, Part I).

Table LXI.—England and Wales, 1929: Deaths of Women Classed to Pregnancy and Childbearing—*continued*.

Cause of Death.	All Ages.	Civil Condition.			Ages.						
		Single.	Married.	Widowed.	15–	20–	25–	30–	35–	40–	45 and upwards
Craniotomy	5	—	5	—	—	1	1	—	3	—	—
Instrumental delivery	19	1	18	—	—	—	5	7	6	1	—
Malpresentation	22	1	21	—	—	3	7	6	3	3	—
Version	2	—	2	—	—	—	1	—	1	—	—
Impacted fœtus	2	—	2	—	—	1	—	—	—	1	—
Abnormal fœtus	13	—	13	—	—	3	3	6	1	—	—
Difficult and prolonged labour	54	1	52	1	—	8	12	15	11	8	—
Cæsarean section (reason unstated)†	8	—	8	—	—	1	—	3	2	2	—
Rupture of Cæsarean scar	6	—	6	—	—	1	2	2	1	—	—
Rupture of uterus	27	1	26	—	1	2	5	7	7	5	—
Rupture of vagina	1	—	1	—	—	—	—	—	1	—	—
Rupture of broad ligament	1	—	1	—	—	—	—	—	1	—	—
Rupture of bladder	1	—	1	—	—	—	—	—	1	—	—
Laceration of uterus	1	—	1	—	—	—	—	1	—	—	—
Laceration of cervix	3	—	3	—	—	—	—	—	—	3	—
Laceration of vagina	1	—	1	—	—	—	1	—	—	—	—
Perineorrhaphy	2	—	2	—	—	—	1	—	1	—	—
Inversion of uterus	2	—	2	—	1	—	1	—	—	—	—
Sub-involution of uterus	1	—	1	—	—	—	—	—	—	1	—
Uterine inertia	9	—	9	—	—	4	1	3	1	—	—
Contraction of uterus	1	—	1	—	—	1	—	—	—	—	—
Rigidity of cervix uteri	2	—	2	—	—	—	1	1	—	—	—
Diseased placenta	1	—	1	—	—	—	—	—	1	—	—
Adherent and retained placenta	4	—	4	—	—	1	—	2	—	1	—
Precipitate birth	3	—	3	—	—	—	—	1	2	—	—
Childbirth apart from above complications:—											
With secondary causes as follows:—											
Anæmia	4	—	4	—	—	1	1	—	2	—	—
Pericarditis	1	—	1	—	—	—	1	—	—	—	—
Broncho-pneumonia	3	—	3	—	—	1	—	1	1	—	—
Pneumonia	5	1	4	—	—	—	2	—	2	1	—
Empyema	1	—	1	—	—	—	—	—	—	—	1
Pulmonary congestion	1	—	1	—	—	—	—	1	—	—	—
Gastro enteritis	1	—	1	—	—	—	—	1	—	—	—
Suppression of urine	1	—	1	—	—	—	—	—	1	—	—
Without stated secondary cause	8	1	7	—	—	—	1	2	3	1	1
146. Puerperal sepsis §:—	**1157**	**77**	**1072**	**8**	**36**	**205**	**339**	**266**	**212**	**92**	**7**
scarlet fever	7	1	6	—	1	3	1	1	1	—	—
streptococcal infection	47	3	44	—	3	8	11	7	13	5	—
pneumococcal infection	1	—	1	—	—	—	—	1	—	—	—
staphylococcal infection	4	—	4	—	—	1	3	—	—	—	—
gonococcal infection	1	—	1	—	—	—	—	1	—	—	—
bacillus coli infection	3	—	3	—	—	1	1	1	—	—	—
gas gangrene	2	1	1	—	—	1	—	—	1	—	—
septic phlegmasia alba dolens, phlebitis, thrombosis	52	3	49	—	—	9	5	11	14	12	1
septic pneumonia	15	1	14	—	—	3	6	2	2	2	—
septic endocarditis	2	—	2	—	—	—	—	—	2	—	—
septicæmia	528	36	489	3	19	80	180	109	92	44	4
sepsis	74	5	67	2	1	16	17	24	12	4	—
septic intoxication, sapræmia	38	2	35	1	—	6	9	14	9	—	—
pelvic peritonitis	22	1	20	1	—	11	4	3	3	1	—
peritonitis	124	12	112	—	2	27	37	29	22	7	—
salpingitis	15	—	15	—	—	1	4	4	4	2	—
metritis	7	1	6	—	1	1	2	1	2	—	—
endometritis	54	3	50	1	2	7	12	15	13	4	1
parametritis	13	1	12	—	1	2	5	2	2	1	—
erysipelas	1	—	1	—	1	—	—	—	—	—	—
pyæmia	16	—	16	—	—	3	5	6	2	—	—
pelvic cellulitis	22	1	21	—	2	7	4	4	4	1	—
cellulitis	1	—	1	—	—	—	—	—	—	—	1
pelvic abscess	5	—	5	—	—	1	—	3	—	1	—
other specified septic conditions	9	3	6	—	1	2	1	2	1	2	—
" puerperal fever "	94	3	91	—	2	15	32	26	13	6	—
147. (1) Puerperal phlegmasia alba dolens, not returned as septic	17	—	17	—	—	—	5	3	5	3	1
(2) Puerperal embolism and sudden death	163	8	152	3	5	12	43	46	39	18	—
148. Puerperal albuminuria and convulsions:—	**524**	**35**	**486**	**3**	**31‡**	**97**	**132**	**121**	**97**	**41**	**5**
Puerperal nephritis, albuminuria, etc.	165	10	154	1	9‡	29	37	39	34	16	1
Puerperal convulsions	359	25	332	2	22	68	95	82	63	25	4
149. Puerperal insanity	22	4	18	—	2	4	3	10	3	—	—
150. Puerperal diseases of the breast	6	—	6	—	—	3	2	—	1	—	—
Total	2,787				91	413	733	658	598	270	24
Single		165	—	—	41‡	52	39	18	8	7	—
Married		—	2,598	—	50	361	692	635	580	256	24
Widowed		—	—	24	—	—	2	5	10	7	—

† In addition, Cæsarean section was stated to have been performed in the case of 96 deaths included in other headings in this table—Placenta prævia 15, contracted pelvis 55, malpresentation 4, abnormal fœtus 2, difficult labour 9, artificial vagina 1, rupture of uterus 1, puerperal albuminuria and convulsions 9.

‡ Including one aged 14 years.

§Of these deaths, 238 were stated to be post-abortion or under 28 weeks gestation, 34 following full term delivery, while in 885 the period of gestation was not stated.

The proportion to live births of cases notified has risen from 30 in 1927 to 37. This proportion may have been affected by the compulsory notification of " puerperal pyrexia," which was in force throughout the year, having commenced on October 1, 1926. But as the rate of 37 in 1929 compares with 26–38 in the ten preceding years, it seems unlikely that any effect of the change upon the number of notifications of puerperal fever can have been of great importance. The records of notifications under both headings will be found in Tables 26–28, but as those for puerperal fever are evidently much more comparable with those of previous years under this head as they stand than if supplemented by the figures for puerperal pyrexia they will for the present be considered alone.

In London, the county boroughs of the South and the rural districts of the Midlands the notifications ratio is much higher in 1929 than in 1928, while in the remaining English divisions the rate shows no appreciable change. In Wales the rate was lower than in 1928 in the county boroughs and rural districts but higher in the urban districts other than county boroughs.

Table LXII.—Puerperal Fever, 1929 : Prevalence and Fatality.

	Cases notified per 10,000 Live Births.					Deaths per 1,000 Cases notified.				
	North.	Mid-lands.	South.	Wales.	England and Wales.	North.	Mid-lands.	South.	Wales.	England and Wales.
London	—	—	45	—	45	—	—	419	—	419
County Boroughs ..	48	.44	43	72	47	448	353	406	100	393
Other Urban Districts ..	27	28	29	30	28	633	534	525	719	582
Rural Districts	29	33	26	18	29	809	516	704	1,280	676
All Areas	39	34	37	36	37	526	452	475	535	490

As in each of the preceding nine years, for which it has been prepared, Table LXII shows large urban excess in the proportion of cases of puerperal sepsis notified—much larger than the urban excess for deaths in Table LX. As a rule there is a greater tendency in the rural districts than in the towns to leave unnotified cases of puerperal sepsis which ultimately prove fatal. In the rural districts of Wales, indeed, deaths have exceeded notifications in several years.

As in 1928 the fatality ratio, or proportion of deaths to notifications, was lower in the county boroughs of the Midlands than in any other section of Table LXII, except the county boroughs of Wales. The Midland county boroughs were also lowest in five of the nine preceding years, so as the cases notified appear to be mildest in this section of the population it may be that for it notification is most complete.

Table LXIII shows the causes of deaths stated to have been complicated by the existence of the puerperal state. The largest numbers in this table are—influenza 155, lobar pneumonia 100, chronic nephritis 77, respiratory tuberculosis 73, mitral disease 67,

and other or unspecified valvular disease 58. For heart disease of all forms the total is 202. These deaths are of much the same type year after year, heart disease, pneumonia (conceivably septic), and influenza generally figuring prominently in the table. Of 62 deaths of females at all ages from acute yellow atrophy of the liver, and 48 at 15–45 (Table 17), 34 were stated to have been associated with pregnancy or childbearing.

Table LXIII.—England and Wales, 1929 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith.

Cause of Death.	All Ages.	15–	20–	25–	30–	35–	40–	45 and upwards
7 Measles	1	—	—	—	1	—	—	—
8 Scarlet fever	7	—	2	4	—	—	1	—
10 Diphtheria	2	—	—	2	—	—	—	—
11 Influenza	155	2	16	40	49	27	21	—
13 Mumps	2	—	1	1	—	—	—	—
23 Encephalitis lethargica	2	—	1	—	1	—	—	—
29 Tetanus (bacillary)	4	—	1	—	2	—	1	—
30 (2) Sprue	1	—	—	—	1	—	—	—
31 Tuberculosis of respiratory system	73	1	15	14	25	9	9	—
32–37 Other forms of tuberculosis	17	1	6	1	4	3	2	—
38 Syphilis	5	—	—	1	1	3	—	—
40 (1) Gonorrhœa	1	—	—	1	—	—	—	—
43–49 Cancer	8	—	1	—	3	1	2	1
51 Rheumatic fever	9	—	2	1	1	2	3	—
57 Diabetes	9	—	1	5	2	1	—	—
58 (a) Pernicious anæmia	10	1	1	3	3	1	1	—
58 (b) Splenic anæmia	1	—	—	1	—	—	—	—
60 (a) Exophthalmic goitre	11	—	—	4	4	3	—	—
60 (b3) Goitre	2	—	2	—	—	—	—	—
63 Addison's disease	1	—	1	—	—	—	—	—
65 (a) Leukæmia	4	—	—	—	1	3	—	—
69 (1) Purpura hæmorrhagica	2	—	—	—	1	1	—	—
69 (2) Hæmophilia	2	—	—	1	1	—	—	—
69 (3) Adiposa dolorosa	1	—	—	—	—	1	—	—
70 (2) Encephalitis	1	—	—	—	1	—	—	—
71 Meningitis	2	—	—	1	1	—	—	—
74 Cerebral hæmorrhage	3	—	—	1	—	1	1	—
78 Epilepsy	11	1	3	2	1	1	2	1
84 (2) Cerebral tumour	1	—	1	—	—	—	—	—
84 (3) Disseminated sclerosis	1	—	1	—	—	—	—	—
86 (2) Otitis media	2	—	1	—	—	—	1	—
88 (1) Infective endocarditis	10	—	1	2	1	5	1	—
88 (2) Other acute endocarditis	9	1	1	—	3	4	—	—
88 (3) Acute myocarditis	16	—	—	1	5	9	1	—
90 (2) Mitral valve disease	67	3	11	20	12	14	6	1
90 (1–3–4) Other or unspecified valvular disease	58	1	15	12	10	13	4	3
90 (5) Fatty heart	7	—	—	1	2	1	3	—
90 (6–7) Other or unspecified myocardial disease	21	—	1	3	2	6	6	3
90 (8–9) Heart disease undefined	14	—	1	2	5	3	3	—
91 (a) Aneurysm of aorta	1	—	—	—	—	1	—	—
92 Pulmonary embolism	1	—	—	—	1	—	—	—
93 Diseases of the veins	5	—	—	—	3	2	—	—

Table LXIII.—England and Wales, 1929 : Deaths of Women not classed to Pregnancy and Childbearing, but returned as associated therewith—*continued*.

Cause of Death.	All Ages.	Ages.						
		15–	20–	25–	30–	35–	40–	45 and up-wards–
98 (2) Laryngitis	1	—	—	—	—	1	—	—
99 Bronchitis	17	—	1	1	3	6	3	3
100 Broncho-pneumonia	29	1	4	9	7	4	3	1
101 (a) Lobar pneumonia	100	1	12	29	25	24	9	—
101 (b) Pneumonia (type not stated)	19	1	1	4	7	4	2	—
102 (1) Empyema	2	—	—	—	1	1	—	—
102 (2) Other pleurisy	10	—	—	4	3	2	1	—
105 Asthma	5	1	—	1	—	2	1	—
108 (1) Pyorrhœa	1	—	—	—	—	1	—	—
109 (1) Tonsillitis	1	—	—	1	—	—	—	—
111 (a) Ulcer of the stomach	6	—	—	1	2	2	1	—
112 (1) Inflammation of stomach	2	—	—	—	2	—	—	—
112 (2) Dilatation of the stomach	1	—	—	—	—	—	1	—
113–114 Diarrhœa and enteritis	2	—	—	1	—	—	1	—
117 Appendicitis	16	—	5	1	4	5	1	—
118 (a) Hernia	1	—	—	—	1	—	—	—
118 (b) Intestinal obstruction	31	—	3	7	10	8	3	—
119 Other diseases of the intestines	3	—	—	1	2	—	—	—
120 Acute yellow atrophy of liver	34	—	4	11	13	4	2	—
123 Biliary calculi	2	—	—	1	1	—	—	—
125 Acute pancreatitis	1	1	—	—	—	—	—	—
129 Chronic nephritis	77	2	10	16	16	20	11	2
131 Other diseases of the kidneys and annexa	3	—	—	2	—	—	1	—
132 Calculus of kidney	1	—	1	—	—	—	—	—
134 (b) Vesico-vaginal fistula	1	—	—	—	—	1	—	—
137 Cysts and other tumours of the ovary not returned as malignant	11	—	1	2	6	1	1	—
139 Tumours of the uterus not returned as malignant	11	—	1	—	2	5	3	—
141 (2) Cyst of broad ligament	1	—	—	—	1	—	—	—
153 (1) Cellulitis	2	—	—	—	—	1	1	—
153 (2) Whitlow	1	—	—	—	—	—	1	—
155 (2) Lateral curvative of spine	1	—	—	—	1	—	—	—
156 Acute arthritis	1	—	—	1	—	—	—	—
159 (2) Congenital malformation of heart	2	—	1	—	1	—	—	—
165-203 Violence	4	—	—	—	4	—	—	—
Total	960†	18	130	217	259	207	114	15
Single	44	7	17	13	3	4	—	—
Married	904	11	112	204	252	199	111	15
Widowed	12	—	1	—	4	4	3	—

† Of these 960 deaths, 227 were stated to be associated with pregnancy, 182 with abortion, 33 with premature delivery, 9 with delivery at full term, and 509 with "childbirth."

204, 205. **Ill-defined Causes of Death.**—These headings in the International List of Causes of Death, to which 831 deaths have been allocated, exclude the ill-defined diseases of infancy and old age, 160 (1) and 164 (2). In the more comprehensive sense resulting from their inclusion, the deaths from ill-defined causes in 1929 numbered 22,367, or 4·20 per cent. of the total, as compared with 4·59 in 1928 and 9·67 in 1911.

Table LXIV.—England and Wales, 1929: Replies to Inquiries respecting Indefinitely Certified Causes of Death.

Subject of Inquiry.	Replies received.	Replies ampli-fying previous information.	Deaths allocated as the result of inquiry to certain headings.
Croup	22	21	Diphtheria 2, Laryngismus stridulus 3, Laryngitis 9.
Membranous laryngitis	4	4	Diphtheria 1.
Pyæmia, septicæmia, etc.	202	176	Diseases of the teeth and gums 5, Tonsillitis 6, Puerperal sepsis 3, Diseases of the skin 20, Diseases of the umbilicus, 5.
Tuberculosis	128	127	Tuberculosis of the respiratory system 73, Tuberculosis of the intestines and peritoneum 4, Tuberculosis of vertebral column 2, Tuberculosis of joints 3, Tuberculosis of bones 3, Tuberculosis of the lymphatic system 5, Disseminated tuberculosis 18, other forms of tubercle 6.
Cancer (part or organ not stated)	1,220	1,184	Part or organ stated in 1,171 cases.
Cerebral tumour (P.M. cases)	196	186	Tuberculosis of the central nervous system 3, Syphilis 5, Cancer 48, Glioma 75.
Tumour of other sites	777	669	Syphilis 6, Cancer 483.
Rheumatism	614	610	Rheumatic fever 195, Chronic rheumatism 7, Osteo-arthritis 13, Rheumatic heart disease 351.
Encephalitis	212	188	Measles 1, Influenza 10, Polio-encephalitis 3, Encephalitis lethargica 62, Tuberculosis of the central nervous system 5, Syphilis 4, Cerebral abscess 1, other forms of encephalitis 52, Meningitis 4.
Basal or basic meningitis	38	37	Meningococcal meningitis 6, Tuberculosis of the central nervous system 11, Meningitis—other forms 12.
Posterior or post basal or post basic meningitis	66	62	Influenza 5, Meningococcal meningitis 40, Tuberculosis of the central nervous system 7.
Cerebro spinal meningitis	157	153	Whooping cough 1, Encephalitis lethargica 1, Meningococcal meningitis 125, Tuberculosis of the central nervous system 6, Meningitis —other forms 11.
Spinal sclerosis	18	17	Diseases of the spinal cord 7, Disseminated sclerosis 9.

Table LXIV.—England and Wales, 1929 : Replies to Inquiries respecting Indefinitely Certified Causes of Death—*continued*.

Subject of Inquiry.	Replies received.	Replies amplifying previous information.	Deaths allocated as the result of inquiry to certain headings.
Cerebral sclerosis ..	15	14	Encephalitis lethargica 1, Disseminated sclerosis 4, Arterio sclerosis 6.
Paraplegia	59	51	Encephalitis lethargica 1, Syphilis 2, Diseases of the spinal cord 11, Cerebral hæmorrhage 9.
General paralysis (outside asylums)	47	45	Encephalitis lethargica 1, General paralysis of the insane 28.
Paralysis	20	17	Encephalitis lethargica 1, Diseases of the spinal cord 4.
Aortitis, arteritis and endarteritis	94	89	Syphilis 40, Arterio sclerosis 6.
Fibroid phthisis ..	124	123	Influenza 3, Tuberculosis of respiratory system 89, Chronic interstitial pneumonia 18.
Hæmoptysis ..	42	42	Tuberculosis of the respiratory system 15.
Stomatitis	33	32	Thrush, aphthous stomatitis, 7.
Stricture of œsophagus	29	24	Cancer 12.
Hæmatemesis ..	31	26	Cancer 3, Ulcer of stomach or duodenum 15.
Pyloric obstruction, stenosis, etc.	48	42	Cancer 7, Ulcer of stomach or duodenum 22.
Jaundice	51	43	Influenza 2, Syphilis 1, Cancer 8.
Peritonitis	100	88	Influenza 2, Tuberculosis of the peritoneum 5, Syphilis, 1, Cancer 4, Ulcer of stomach and duodenum 6, Appendicitis 11, Intestinal obstruction 6, Diseases of female genital organs 7, Puerperal sepsis 5.
Pemphigus of infants	135	126	Syphilis 17, Diseases of the umbilicus 6.
Hydrocephalus ..	90	80	Congenital hydrocephalus 36, Meningococcal meningitis 2, Tuberculosis of the central nervous system 8, Syphilis 1.
Violence	582	575	Precise form of suicide 93, Injury by drowning 7, Injury by fall 68, Injury in mines and quarries 42, Injury by machines 8, Injury by crushing 183.
Syncope, heart failure (ages 1–70)	146	122	Influenza 2, Tuberculosis of the respiratory system 1, Syphilis 1, Diseases of the heart 73.
Operation	453	436	Cancer 33, Ulcer of the stomach and duodenum 39, Appendicitis 13, Hernia, intestinal obstruction 32, Biliary calculi 47, Diseases of the prostate 18, Ovarian tumour 7, Uterine tumour 33, Congenital malformations 8, Violence 17.
Other indefinite forms of certificate	2,551	2,341	—
Total ..	8,304	7,750	—

Inquiries sent to medical practitioners and coroners requesting further information as to indefinitely certified deaths amounted to 8,873, and to these 8,304 replies were received, with results to classification, some of the most important of which are set out in Table LXIV.

The total additions to certain definite headings resulting from these enquiries were as follows :—To influenza 98 ; to encephalitis lethargica 76 ; to meningococcal meningitis 178 ; to tuberculosis of the respiratory system 216 ; to other forms of tuberculosis 146 ; to venereal diseases 148 ; to cancer 663 ; to diseases of the spinal cord 49; to general paralysis of the insane 32 ; to disseminated sclerosis 25 ; to arterio-sclerosis 63 ; to ulcer of the stomach or duodenum 131 ; to appendicitis and typhlitis 62 ; to biliary calculi 74 ; to diseases of the prostate 61 ; to puerperal sepsis 42 ; and to congenital malformations 79.

In addition to the foregoing, 1,342 inquiries were addressed to medical practitioners who had initialled statement " B " on the back of the new form of medical certificate, thereby indicating the possibility of being in a position to furnish additional information respecting the certified cause of death as the result of a P.M. or laboratory examination which was not available at the time of signing the certificate. Of the 1,115 replies received to these inquiries, 449 amended the original certification.

Anæsthetics.—The usual annual statement is continued of deaths during or connected with the administration of an anæsthetic. This is obtained by secondary tabulation of these deaths, since the primary tabulation, represented by Table 17, classifies all such deaths to the disease or injury on account of which the anæsthetic was administered.

The total number of deaths in Table LXV, 730, exceeds that for 1928 by 74, and is more than double that of any year prior to 1916. During the 19 years for which fully comparable figures can be stated these deaths first increased slowly from 276 in 1911 to 336 in 1922 (366 in 1920) and then rapidly to 730 in 1929.

For the years before 1911 the record is contained in the tables of accidental deaths, but certain causes—strangulated hernia and cancer—were at this time preferred in tabulation to the anæsthetic used. In 1929 the 730 deaths included 87 associated with cancer, and 58 with hernia. So for comparison with the years prior to 1911 the number of deaths should be reduced to 585. But during 1901–10 the deaths ranged from 133 (1901) to 234 (1910).

Subject to allowance, on the scale indicated by this reduction, for the more comprehensive nature of the figures from 1911 onwards, the records of the present century may be compared as in Table LXVI.

Table LXV.—England and Wales, 1929 : Deaths under or connected with the Administration of various Anæsthetics.

Anæsthetic.	All Ages	0-	1-	5-	10-	15-	20-	25-	30-	35-	40-	45-	50-	55-	65-
Chloroform M.	63	1	8	9	2	5	2	3	1	6	3	5	4	7	7
Chloroform F.	41	–	2	–	4	1	2	7	5	8	–	4	2	6	–
Chloroform and ether M.	116	1	4	9	2	5	4	5	3	10	8	12	9	28	16
Chloroform and ether F.	93	2	7	11	4	6	4	11	5	5	7	8	5	11	7
Chloroform, ether and ethyl chloride M.	6	–	5	–	–	–	–	–	–	–	–	–	–	–	1
Chloroform, ether and ethyl chloride F.	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Chloroform, ether, ethyl chloride and " novocaine " F.	1	–	–	–	–	–	–	–	–	–	1	–	–	–	–
Chloroform and alcohol M.	1	–	1	–	–	–	–	–	–	–	–	–	–	–	–
Ether M.	142	8	28	19	7	3	6	6	1	2	9	10	11	15	17
Ether F.	121	6	15	8	1	3	5	7	10	7	8	13	13	16	9
Ether and ethyl chloride M.	12	2	4	3	1	–	–	–	–	–	1	–	–	–	1
Ether and ethyl chloride F.	13	–	2	1	–	–	2	1	–	2	1	–	–	3	1
Ether and " stovaine " M.	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Ether and " stovaine " F.	2	–	–	–	–	–	–	–	–	–	–	1	–	1	–
A.C.E. mixture M.	3	1	1	–	–	–	–	–	–	–	–	–	–	1	–
A.C.E. mixture F.	6	–	–	–	–	–	–	–	–	2	2	–	1	–	1
Ethyl chloride M.	7	–	1	3	3	–	–	–	–	–	–	–	–	–	–
Ethyl chloride F.	3	–	–	2	–	–	–	–	–	–	–	–	–	1	–
Ethyl hydroxide M.	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
Nitrous oxide M.	27	–	1	–	1	1	1	2	2	1	1	1	1	5	10
Nitrous oxide F.	11	–	–	2	1	2	–	–	2	1	–	–	1	2	–
" Stovaine " M.	3	–	–	–	–	–	–	–	–	–	1	1	–	–	1
" Stovaine " F.	6	–	–	–	1	–	1	–	1	1	1	–	–	1	–
" Novocaine " M.	12	–	–	1	1	–	–	–	–	–	–	1	2	3	4
" Novocaine " F.	3	–	–	–	–	–	–	–	–	–	2	–	–	–	1
Cocaine M.	2	–	–	–	–	1	1	–	–	–	–	–	–	–	–
Cocaine and " novocaine " F.	1	–	–	–	–	–	–	–	1	–	–	–	–	–	–
" Tropococaine " M.	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
" Tropococaine " F.	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–
" Tutocaine " M.	3	–	–	–	–	–	–	–	–	–	1	–	–	1	1
" Spinocaine " M.	1	–	–	–	–	–	–	–	–	–	–	–	1	–	–
" Spinocaine " F.	1	–	–	–	–	–	–	–	–	–	–	–	–	1	–
" Planocaine " F.	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
" Pencaine " F.	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–
" Avertin " M.	1	–	–	–	–	–	1	–	–	–	–	–	–	–	–
" Avertin " F.	1	–	–	–	–	–	–	–	–	1	–	–	–	–	–
Kind not stated M.	12	–	–	–	–	–	1	1	1	–	1	1	3	2	2
Kind not stated F.	9	–	–	–	–	–	1	1	1	1	1	–	1	1	2
Total M.	414	13	53	44	17	15	16	17	8	19	24	31	32	64	61
Total F.	316	8	27	24	11	12	15	27	25	29	23	26	24	43	22

The increase since 1911–15 is very general in its application to sex and age, but affects chiefly the aged of both sexes. It is least for males of 25–45, whose deaths till recently tended rather to decrease.

Table LXVI.—England and Wales : Deaths under or associated with Anæsthesia, 1901-29.

Year.	Males.									Females.								
	All ages	0-.	5-.	15-.	25-.	35-.	45-.	55-.	65-	All ages	0-.	5-.	15-.	25-.	35-.	45-.	55-.	65-
Yearly average :																		
1901–05*	95	14	20	9	13	16	11	7	4	53	6	9	7	11	8	8	3	2
1906–10*	125	26	20	12	16	18	16	9	8	77	7	14	9	18	11	10	4	3
1911–15..	167	30	23	14	20	28	24	16	10	116	14	17	15	16	22	18	10	5
1916–20..	188	36	25	25	27	22	20	19	13	119	11	16	14	21	22	17	7	9
1921–25..	229	40	28	20	18	27	36	37	24	169	20	17	17	30	29	25	17	12
1921 ..	204	30	29	16	16	19	34	30	30	133	16	23	16	24	21	19	11	3
1922 ..	185	29	21	16	9	27	30	35	18	151	16	15	12	29	31	26	12	10
1923 ..	262	45	37	29	17	38	35	34	27	184	22	23	14	23	32	32	23	15
1924 ..	245	51	30	21	25	21	42	39	16	184	26	11	30	29	31	21	18	18
1925 ..	249	43	25	17	23	28	39	45	29	193	22	14	15	43	32	29	23	15
1926 ..	306	57	43	23	29	34	39	43	38	250	32	22	29	35	44	51	23	14
1927 ..	328	43	51	25	20	30	42	70	47	268	24	28	29	46	47	40	35	19
1928 ..	384	63	41	30	23	43	55	67	62	272	29	21	27	44	45	44	33	29
1929 ..	414	66	61	31	25	43	63	64	61	316	35	35	27	52	52	50	43	22

* Excluding deaths from cancer and strangulated hernia—*see* page 87.

Deaths in later periods compared with those of 1911–15 taken as 100.

Yearly average :																		
1911–15	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1916–20	113	120	109	179	135	79	83	119	130	103	79	94	93	131	100	94	70	180
1921–25	137	133	122	143	90	96	150	231	240	146	143	100	113	188	132	139	170	240
1921 ..	122	100	126	114	80	68	142	188	300	115	114	135	107	150	95	106	110	60
1922 ..	111	97	91	114	45	96	125	219	180	130	114	88	80	181	141	144	120	200
1923 ..	157	150	161	207	85	136	146	213	270	159	157	135	93	144	145	178	230	300
1924 ..	147	170	130	150	125	75	175	244	160	159	186	65	200	181	141	117	180	360
1925 ..	149	143	109	121	115	100	163	281	290	166	157	82	100	269	145	161	230	300
1926 ..	183	190	187	164	145	121	163	269	380	216	229	129	193	219	200	283	230	280
1927 ..	196	143	222	179	100	107	175	438	470	231	171	165	193	288	214	222	350	380
1928 ..	230	210	178	214	115	154	229	419	620	234	207	124	180	275	205	244	330	580
1929 ..	248	227	265	221	125	154	263	400	610	272	250	206	180	325	236	278	430	440

In 1929, as in most other recent years, deaths of females were in excess at ages 25–45, and of males at other ages.

The anæsthetic agents recorded on death certificates have altered greatly during the present century. The following statement records the proportion, per cent. of all deaths under anæsthetics of stated type, associated with the exclusive administration at different periods of chloroform, ether, chloroform and ether, and alcohol, chloroform and ether (A.C.E. mixture) respectively :—

	Chloro-form.	Ether.	Chloroform and ether.	A.C.E.	Other or mixed.
1901–05	84	7	2	3	4
1906–10	76	9	8	2	5
1911–15	62	14	15	4	5
1916–20	45	19	27	3	6
1921–25	23	28	34	4	11
1927	18	30	30	2	20
1928	17	36	32	1	14
1929	14	36	29	1	20

So far as these figures can be taken as any indication of the type of anæsthetic chiefly used, as to which their exclusive association with fatalities makes them an unreliable guide, the increase of deaths under anæsthesia has occurred notwithstanding very general substitution of the safer agent, ether, for the more dangerous chloroform, which was associated with over four-fifths of the deaths at the beginning of the century, but with less than one-seventh in 1929. The increased proportion of fatalities with "other or mixed" anæsthetics is associated with rapidly increasing record of the use of certain agents, especially ethyl chloride, stovaine, and novocaine, which till recently were rarely mentioned on death certificates.

Proportions of deaths, per 10,000 under anæsthetics of stated type, associated with ethyl chloride, alone and in combination, and with nitrous oxide, stovaine, and novocaine as the only anæsthetic used, have been as follows at the periods stated :—

| | *Ethyl Chloride* | | | | |
	Alone.	*In combination.*	*Nitrous Oxide.*	*Stovaine.*	*Novocaine.*
1916–20	155	36	146	91	9
1921–25	157	151	308	186	81
1926	134	363	286	172	57
1927	246	704	563	158	141
1928	142	300	474	79	237
1929	141	465	536	127	212

It need scarcely be pointed out that these proportions must depend upon the extent to which the various agents are used as well as upon the risk attaching to them. But unfortunately the deaths associated with each type of anæsthetic cannot be collated with the number of its administrations. It is not even possible to say whether, or to what extent, the rapid increase in the number of these deaths implies increased mortality under anæsthetics. The number of administrations is known to be increasing very rapidly, but cannot be stated. The deaths tabulated, moreover, can only be those under, not those caused by, anæsthesia. It is impossible from certification to distinguish between deaths from operation under anæsthesia and deaths due to the anæsthetic itself, and, this being so, it seems possible that the increase of this type of death may be partly dependent upon increase of boldness in operative surgery.

Of the 730 deaths in Table LXVI, 580 (79 per cent.) were classed to the 21 headings enumerated in this list, the remainder being of very varied causation and included non-malignant tumours 18, diseases of the ear other than of the mastoid 8, peritonitis 7, and exophthalmic goitre 6 deaths. The composition of this list changes little from year to year.

The conditions chiefly calling for anæsthesia in these cases are as follows—the list being arranged in the order of the titles of the International List to which the deaths were assigned :—

		Males	Females			Males	Females
32–36	Non - respiratory tuberculosis ..	12	4	118 (b)	Intestinal ob-struction ..	22	14
43–49	Cancer	43	44	123	Biliary calculi ..	7	6
86 (1)	Diseases of the mastoid sinus	14	6	124 (pt)	Diseases of the gall bladder ..	5	7
97	Diseases of the nasal fossæ and annexa ..	4	5	134 (a) 135	Stricture of the urethra .. Diseases of the	3	—
102 (1)	Empyema ..	21	8		prostate ..	12	—
108(1) (pt)	Extraction of teeth	16	5	136 (pt) 139 (pt)	Circumcision .. Uterine fibroids	7 —	— 8
109 (1)	Tonsillitis and adenoid vege-tations ..	30	19	143–149 155 (1)	Childbirth and abortion .. Acute infective	—	44
111	Gastric and duo-denal ulcer ..	25	4	159	osteo - myelitis Congenital mal-	3	4
117	Appendicitis ..	33	18		formations ..	12	10
118 (a)	Hernia	38	20	165-203	Violence ..	34	13

The proportion of these deaths reported from different classes of institutions, etc., in various sections of the country, is stated in the following table, in which, as place of occurrence is evidently of more interest for these deaths than place of residence, they have been tabulated by area of registration, the registration counties of former Annual Reports (before 1911) being grouped into five sections of the country on the lines indicated in the footnote to Table V on page 7.

Table LXVII.—Deaths under Anæsthetics Registered in 1929. Distribution by Part of Country and Place of Occurrence.

		Hospitals.	Poor Law Institutions.	Mental Hospitals.	Nursing Homes.	Elsewhere.	Total.
North ..	M.	112	13	2	5	10	142
	F.	81	13	—	4	10	108
Midlands	M.	70	16	1	5	8	100
	F.	63	17	1	1	7	89
London ..	M.	63	10	1	7	3	84
	F.	44	12	—	3	2	61
Remainder of South	M.	51	7	—	8	7	73
	F.	23	4	—	9	7	43
Wales ..	M.	14	—	—	—	1	15
	F.	9	—	—	1	5	15
England and Wales	M.	310	46	4	25	29	414
	F.	220	46	1	18	31	316

The features of this table have changed little during 1925-29, the only years for which it has been published. During these years the proportion of hospital deaths has varied only from 80 per cent. of the total in 1926 to 73 in 1929 and 72 in each of the other three years ; for poor-law institutions the percentage has been 8-13 in different years ; for mental hospitals never over 1 ; for nursing homes 4-7 ; and for non-institutional deaths 7-10.

The distribution is equally stable for the sections of the country distinguished, the North furnishing 31-35 per cent. of the deaths in each of the four years, London 20-28, the remainder of the South 12-18, and Wales 3-5 per cent. These proportions, being evidently in general correspondence with the respective populations, do not seem to suggest any markedly contrasted incidence of the deaths.

Status Lymphaticus and Anæsthetics.—In addition to the 202 deaths from status lymphaticus primarily classified to diseases of the thymus in Table 17, there were 41 deaths under anæsthetics in the case of which record was made of the presence of this condition, but which have been referred in tabulation to the condition occasioning the administration of the anæsthetic.

The sex and age distribution of these was as follows :—

	All Ages	0–	5–	10–	15–	20–	25–	35–
Males ..	23	6	8	1	2	3	2	1
Females ..	18	4	5	1	2	–	4	2

MEDICAL CERTIFICATION.

Reference may be made to the section under this head in the corresponding volume of the Statistical Review for 1928, as indicating the circumstances in which it has been arranged to include statistics on this subject as a regular annual feature of the Review. As stated therein, the figures for 1928 were given with a special degree of elaboration intended to serve as a datum line for similarly exhaustive comparisons on periodical occasions in the future ; and for the present and other intermediate years less detail is proposed to be given. It will be borne in mind that the Regulations require a death to be reported to the Coroner if the medical attendant certifying the cause of death had seen the deceased neither after death nor within 14 days before death.

In Table LXVIII figures are given bearing upon the extent to which death registration and burial take place on the strength of the certificate of a medical attendant who has seen the body

of the deceased after death. In any statistical analysis it is necessary for all practical purposes to group with such cases those where the death was the subject of a Coroner's inquest or post mortem examination, or came under review by a Coroner prior to registration and burial. These cases are therefore included under the head of " seen."

Table LXVIII.—Summary of Certification of Deaths Registered During the Year 1929.

	Registered Medical Practitioner.	Inquest or Coroner's P.M. without Inquest.	Other cases reviewed by Coroner.*	Total deaths registered.	
				Number.	Percentage.
Seen after death ..	219,473	40,111	5,015	264,599	49·7
Not seen after death	266,182	—	—	266,182	50·0
No statement ..	1,711	—	—	1,711	0·3
	487,366	40,111	5,015	532,492	100·0

* Cases without certificate of registered medical practitioner in attendance (which since 1914 must be referred by Registrar to Coroner) where Coroner declined to hold inquest.

The percentage of " seen " cases fell from 51·0 in 1928 to 49·7 in 1929. The decline occurred in all four quarters of the year, but was greatest in the March quarter.

The reduced proportion of " no statement " cases, viz., 0·3 per cent. as compared with 0·5 in 1928, tends to confirm the supposition that this is a temporary feature which should disappear in future returns and which is mainly due to the inception of the new procedure.

In the cases returned above as " not seen " the great majority of the deceased persons were, of course, seen alive by the medical attendant on the day of death or on the day before. Figures are not available for 1929 ; but for 1928 it was stated that " if these cases, totalling to 41 per cent. of the total deaths, are added to those seen after death, as conforming to a standard which satisfies reasonable requirements, the proportion of such cases is increased to 92 per cent. Further, if those ' seen alive ' within two days are added, the total is increased to 96 per cent."

Of the 50·0 per cent., or 266,182 deaths in all, included above as " not seen " after death, a substantial proportion, viz., 73,510, took place in hospitals and other residential institutions.

As the field for any enlargement of the proportion of cases " seen " after death is limited to the cases of deaths certified by medical practitioners it will be of interest to analyse such cases in more detail.

Table LXIX.—Comparison of Proportions of " seen " and " not seen " in Institutions and in Private Practice (Coroners' Cases Excluded).

		Poor Law Institutions.		Voluntary Hospitals.		Private Practice.	
		Seen.	Not Seen.	Seen.	Not Seen.	Seen.	Not Seen.
		%	%	%	%	%	%
March Quarter	1928	35·3	64·7	70·2	29·8	42·8	57·2
	1929	32·0	68·0	69·8	30·2	41·6	58·4
June Quarter..	1928	36·7	63·3	69·7	30·3	41·6	58·4
	1929	35·8	64·2	70·0	30·0	41·0	59·0
September Quarter	1928	37·1	62·9	69·9	30·1	42·3	57·7
	1929	36·2	63·8	69·4	30·6	42·1	57·9
December Quarter	1928	36·7	63·3	69·6	30·4	44·0	56·0
	1929	35·3	64·7	69·9	30·1	43·9	56·1
Year	1928	36·4	63·6	69·8	30·2	42·7	57·3
	1929	34·2	65·8	69·8	30·2	42·0	58·0

Note.—The statutory notice of death respecting all deaths in Mental Institutions provides for a statement of marks of violence found on the body; and in view of this provision all deaths in these institutions have been classed as " seen " after death.

The percentage of " seen " cases in the voluntary hospitals was remarkably constant throughout the two years, but in poor law institutions and in private practice the proportion in each quarter of 1929 was lower than that in the corresponding period of 1928, and in both the decline was greatest in the March quarter, presumably owing to the abnormally high death-rate experienced in consequence of the extreme cold and the prevalence of a severe epidemic of influenza. Compared with 1928, the deaths in the March quarter showed an increase of 62 per cent. in poor law institutions, 56 per cent. in private practice and 26 per cent. in voluntary hospitals.

It will be noted that the highest proportion of " seen " cases is still to be found in the case of deaths occurring in Voluntary Hospitals, while the proportion in poor law institutions was again below that in private practice and to a greater extent than in 1928.

POPULATION.

The total population of England and Wales as at the 30th June, 1929, has been estimated at 39,607,000 persons, 18,969,000 being males and 20,638,000 females.

The total is in excess of the 1921 census figure by some 1,720 thousand persons, so that the population is assumed to have grown by 4·5 per cent. over the eight intervening years, an arithmetical average increase of 0·56 per cent. per annum as compared with 0·49 per cent. per annum during the decade 1911–1921. As between the sexes, the figures indicate a higher rate of growth amongst males and the sex inequality, expressed as 1,096 females per 1,000 males in 1921 is thereby assumed to have been reduced to 1,088 females per 1,000 males at the present time.

The method now adopted in arriving at the estimates consists of tracing forward the last census population, making appropriate additions or deductions for births, deaths and migration from such records of these movements as are available. The largest component in the net increase is what is termed the natural increase, viz., the excess of births over deaths registered in the country ; it is in fact in excess of the net increase, the migration element being outward on balance, and it may for all practical purposes be accepted as an exact record. But the same cannot be said of the migration element of the movement. Information regarding permanent migrants (*i.e.*, persons changing their permanent residence) between this country and places outside Europe, and also statistics of passenger traffic to and from the United Kingdom, are collected by the Board of Trade. The movement of aliens is also dealt with by the Home Office, and from the various War Departments changes in the disposition of non-civilians are available. On the other hand, there is no record of the movement between England and Wales and the other countries of the United Kingdom, and allowance has to be made for this in computing an estimate on the data gathered from the records which are available.

Within a few months of the publication of this volume the preliminary results of the 1931 census will be available, and it should then be possible to arrive at improved population estimates for the intercensal years 1922-1930. Differences between such revised figures and those published in the successive Annual Reviews will be practically wholly due to imperfection in the estimated migration element of movement, but if the experience of the last intercensal period is repeated the differences will be insignificant in relation to the total population figures.

Age Distribution.—The analysis of the sex population totals into their respective age components which is shown in Table LXX, has been derived from the corresponding 1928 distribution by the survivorship method used in recent years ; this, briefly, consists

Table LXX.—England and Wales.—Estimated Age Distribution
of the Population—Mid-1929.

Age-Group.			Persons.	Males.	Females.
All ages	..	..	..	39,607,000	18,969,000	20,638,000
0—	..	..	..	615,020	311,920	303,100
1—	..	..	..	600,250	303,590	296,660
2—	..	..	..	616,210	310,780	305,430
3—	..	..	..	633,460	319,660	313,800
4—	..	..	..	644,160	325,650	318,510
0—	..	..	..	3,109,100	1,571,600	1,537,500
5—	..	..	..	3,625,700	1,834,100	1,791,600
10—	..	..	..	2,987,300	1,503,200	1,484,100
15—	..	..	..	3,525,700	1,766,500	1,759,200
20—	..	..	..	3,545,500	1,770,800	1,774,700
25—	..	..	..	3,247,800	1,560,800	1,687,000
30—	..	..	..	2,923,300	1,316,000	1,607,300
35—	..	..	..	2,784,000	1,265,300	1,518,700
40—	..	..	..	2,632,400	1,203,600	1,428,800
45—	..	..	..	2,557,500	1,184,900	1,372,600
50—	..	..	..	2,332,600	1,096,300	1,236,300
55—	..	..	..	2,043,200	974,900	1,068.300
60—	..	..	..	1,577,900	742,200	835,700
65—	..	..	..	1,175,900	539,200	636,700
70—	..	..	..	782,600	342,500	440,100
75—	..	..	..	458,000	188,900	269,100
80—	..	..	..	217,100	80,900	136,200
85 & upwards	..	..	81,400	27,300	54,100

of (1) obtaining the year's deaths arising from the population
at each age in 1928, and treating the survivors as the population
at the next higher age in 1929, (2) completing the table by the
addition of the population aged 0–1, represented by the survivors
at the middle of 1929 of the births occurring between the middle
of 1928 and the middle of 1929, and (3) adjusting the results of
these two operations in respect of migrants in accordance with
such age statistics as are available in respect of them.

The average ages of the mid-1929 population according to the
estimated age distribution are 31·2 and 32·9 for males and females
respectively, as compared with averages of 29·9 and 31·2 at the
last census, representing increases in the average age of 1·3
and 1·7 during the eight years. Between 1911 and 1921 the
average ages increased by 1·9 and 2·1 respectively.

Local Populations.—For previous years in the current inter-
censal period, estimates of local populations have, as described in
the respective Annual Reviews, been constructed on a basis
analogous to that used in the estimation of the total national
populations, viz., by taking the 1921 populations as a starting
point and adding or subtracting numbers representing the births,
deaths, immigration or emigration, as the case may be, of the
intervening period. The numbers of births and deaths applicable

to each area are known precisely from registration records, and a practicable assessment of the migration element which, in the complete absence of any direct record, is the essence of the estimation process, has up to now been made possible by reference to the successive registers of electors prepared in respect of every area throughout the country. It has always been recognized that electoral changes are not wholly due to migration movements of population. But, on a suitable analysis, the interfering factors can to a large extent be identified and eliminated ; and it has been felt that the returns, so handled, have been capable of yielding a satisfactory picture of the relative internal migration changes so far as they affected the majority of areas for which population estimates are required.

In respect of movements between 1928 and 1929, however, the value of the electoral material as an indicator of migration has been destroyed by the alteration in electoral qualifications and the consequent addition of large numbers of individuals enfranchised for the first time under the Representation of the People (Equal Franchise) Act of 1928. The newly enfranchised are mainly women ; but, doubtless owing to the special care exerted in the preparation of the 1929 register, that register included many additional men who should presumably have been included in the 1928 or earlier registers, so that continuity with earlier records has been broken and the differences between the 1928 and 1929 registers rendered useless as indexes of population movement.

A change in the estimation procedure was thus inevitable for 1929, and in the absence of any other satisfactory migration index, a somewhat empirical method had to be adopted. Local distributions of population were prepared on two alternative bases. In the first a 1929 figure was obtained in respect of each area by projection from the 1928 estimate on the assumption that the trend of movement between 1921 and 1928 was maintained up to the middle of 1929. The second distribution was based upon the new electoral returns, regarded as virtually equivalent under the extended franchise to a census of the adult population in each area, the necessary augmentation to bring in the varying proportions of non-adults being obtained by reference to the local age constitutions provided by the census of 1921.

The two distributions were then compared, and in respect of most areas it was found that the alternative allotments confirmed one another from all practical points of view. When the differences were not regarded as negligible the local conditions were re-examined in the light of housing or other incidental information available and a compromise effected, thus securing some degree of continuity with preceding estimates while at the same time bringing the new electoral material within the scope of the estimation procedure.

Non-Civilian Population :—It will be observed in the tables in which the estimated local populations are given (Table 14 and Table E) that the local deaths and death-rates refer to civilians only and in conjunction with these a civilian population should preferably be used instead of a total

Table LXXI.—Estimated Civilian Population by Sex and Age in the middle of the Year 1929.
(Figures given to the nearest hundred.)

		All Ages.	0–	5–	15–	25–	35–	45–	55–	65–	75 and upwards
All areas :—											
England and Wales	M	18,800,0	1,571,6	3,337,3	3,446,3	2,828,5	2,444,2	2,276,2	1,717,1	881,7	297,1
	F	20,638,0	1,537,5	3,275,7	3,533,9	3,294,3	2,947,5	2,608,9	1,904,0	1,076,8	459,4
North	M	6,332,1	537,0	1,124,9	1,196,5	981,0	842,0	767,4	548,6	262,2	72,5
	F	6,797,1	528,0	1,109,4	1,199,3	1,107,4	985,1	850,8	594,9	312,0	110,2
Midlands	M	6,164,8	512,3	1,103,4	1,138,6	907,0	790,6	734,8	565,8	302,3	110,0
	F	6,681,8	498,9	1,080,7	1,140,1	1,043,0	940,3	833,9	617,2	362,8	164,9
South	M	4,964,0	408,0	861,0	855,8	729,5	639,0	617,6	492,0	263,4	97,7
	F	5,828,4	398,0	841,0	955,3	931,8	842,2	770,3	585,2	344,4	160,2
Wales	M	1,344,1	114,3	248,0	258,2	212,4	173,3	156,5	110,7	53,8	16,9
	F	1,330,7	112,6	244,6	239,2	212,1	179,9	153,9	106,7	57,6	24,1
London	M	2,040,5	175,9	352,2	365,5	321,2	268,8	252,4	186,3	90,3	27,9
	F	2,377,4	171,9	350,1	422,2	404,9	343,6	301,9	214,3	118,1	50,4
County Boroughs;	M	6,284,9	543,6	1,129,2	1,159,6	980,7	847,2	766,3	533,3	252,6	72,4
	F	6,954,9	533,7	1,121,6	1,245,4	1,144,0	1,009,5	861,3	596,4	319,1	123,9
North	M	3,348,7	290,6	597,6	628,2	527,0	455,1	411,3	279,9	126,7	32,3
	F	3,654,1	285,4	593,5	658,1	606,4	535,9	453,6	308,0	158,2	55,0
Midlands	M	2,006,6	174,1	366,5	372,6	311,1	268,4	240,3	167,1	82,0	24,5
	F	2,218,8	171,0	365,1	404,5	364,3	317,1	268,5	185,3	101,6	41,4
South	M	648,4	54,6	114,9	104,4	94,3	86,1	82,3	64,5	34,2	13,1
	F	802,8	53,3	113,0	128,6	125,8	118,2	108,1	82,7	49,2	23,9
Wales	M	281,3	24,3	50,2	54,4	48,3	37,7	32,4	21,8	9,7	2,5
	F	279,2	24,0	50,0	54,2	47,5	38,3	31,1	20,4	10,1	3,6
Other Urban Districts;	M	6,525,6	531,3	1,171,5	1,192,1	981,9	856,7	795,7	593,9	302,0	100,5
	F	7,248,3	520,3	1,149,3	1,241,4	1,151,2	1,043,1	926,1	673,9	380,6	162,4
North	M	2,088,9	170,7	368,4	393,5	324,4	279,9	255,3	183,8	88,7	24,2
	F	2,247,1	168,1	363,9	391,3	365,5	327,1	285,9	202,1	106,5	36,7
Midlands	M	2,510,4	203,8	453,9	462,6	373,5	326,9	302,9	227,9	117,8	41,1
	F	2,787,2	198,6	444,0	483,5	438,5	398,9	352,9	255,9	148,0	66,9
South	M	1,282,0	101,0	225,8	212,1	181,5	165,7	162,4	132,0	72,8	28,7
	F	1,576,7	98,2	219,1	249,8	244,5	230,7	214,8	168,4	101,9	49,3
Wales	M	644,3	55,8	123,4	123,9	102,4	84,2	75,2	50,2	22,7	6,5
	F	637,3	55,4	122,3	116,8	102,7	86,4	72,5	47,5	24,2	9,5
Rural Districts;	M	3,954,0	320,8	684,4	731,8	546,2	472,1	462,0	403,6	236,8	96,3
	F	4,057,4	311,6	654,7	624,9	594,2	551,3	519,6	419,4	259,0	122,7
North	M	894,5	75,7	158,9	174,7	129,6	107,1	100,8	84,9	46,8	16,0
	F	895,9	74,5	152,0	149,9	135,5	122,1	111,3	84,8	47,3	18,5
Midlands	M	1,647,8	134,4	283,0	303,3	222,4	195,3	191,7	170,8	102,5	44,4
	F	1,675,8	129,3	271,6	252,1	240,2	224,3	212,5	176,0	113,2	56,6
South	M	993,2	76,5	168,1	173,9	132,5	118,4	120,5	109,2	66,1	28,0
	F	1,071,5	74,6	158,8	154,7	156,6	149,7	145,5	119,8	75,2	36,6
Wales	M	418,5	34,2	74,4	79,9	61,8	51,3	49,0	38,7	21,4	7,9
	F	414,2	33,2	72,3	68,2	61,9	55,2	50,3	38,8	23,3	11,0

population containing a number of non-civilians. In the majority of areas, however, the two populations are practically identical, and no special measures have been necessary in respect of them, but in areas in which the non-civilians were numerous, estimates of civilian populations have been provided in addition to total populations and are shown in footnotes appended to the tables.

Institutions :—The populations of Hospitals, Infirmaries, Mental Hospitals, etc., remain credited to the areas of enumeration, notwithstanding that some persons so included may, on a strict residence classification, more properly be assigned elsewhere.

Local Age Distributions, 1929.—Sex and age distributions have been prepared for the large aggregates shown in Table LXXI. The populations at ages under five were obtained by the survivorship method (*see* page 96), and for later ages the total populations estimated by the method described in the preceding section were distributed in accordance with the census age and sex distribution of the unit, the resulting figures being thereafter modified to allow for the change between 1921 and 1929 of the age distribution of the total population of the country.

United Kingdom and Irish Free State.—The populations of each of the countries of the United Kingdom and of the Irish Free State as estimated by their respective Registrars-General, are shown for each year from 1890 in Table A.

MARRIAGES.

The marriages registered in England and Wales during the year 1929 numbered 313,316, corresponding to a rate of 15·8 persons married per 1,000 of the population of all ages and conditions. The number so registered is 10,088, or 3·33 per cent. more than the number registered in 1928, and represents an increase of 0·4 in the proportion married per 1,000 population.

The increase is of no particular significance ; it follows a decrease last year of rather smaller dimensions but both may be regarded as within the range of annual fluctuation that is associated with a series of records of this character. The current rate is actually higher than any recorded since 1921 and is somewhat above the general level of pre-war rates, from which it must be assumed that the burden and responsibility of marriage under modern conditions presses no more heavily upon the newly wedded than it did twenty or thirty years ago, notwithstanding the prevailing economic depression.

The preference for the third quarter, noticeable in the records since the beginning of the present century, was maintained in 1929, the marriages in this period being 32 per cent. of the total, while the fourth, formerly the outstanding favourite, now ranks second out of the four. The rate for the first quarter, representing 17 per cent. of the year's marriages, retained its customary place in being lower than that of either of the later quarters.

It may be observed here that by the Age of Marriage Act, 1929, the minimum age at which marriage may be contracted was made 16 in respect of each sex as from the 10th May in place of the hitherto recognised minimum of 14 and 12 for males and females respectively. The numbers involved are of course insignificant and the change has no material influence on the continuity of the statistical record.

In the following table the marriages both of the current year and of a series of past periods are compared with the unmarried population at all ages over 15. By this method of comparison the current year's figure is below that of 1922 but the principal interest of the table is in showing the difference of the behaviour of the rates as between the two sexes. The actual difference between the male and female ratios is of course due to the inequality of the numbers of unmarried men and women in the population and since the former have always been in a minority—which has been unduly exaggerated as a result of the war—it is their numbers which primarily determine the marriageability of the population, so that, from one point of view, the male ratios may be regarded as providing the better indexes to the variations which have occurred from time to time in the incidence of marriage.

Table LXXII.—England and Wales. Annual Number of Marriages of Men and Women per 1,000 Unmarried Population of each Sex aged 15 and over, 1871–1929.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921. During the 1921 period the marriage-rates were changing rapidly and it has been deemed preferable to show the rates for this period by individual years.

Year.	Bachelors, Widowers, Spinsters and Widows.	Bachelors and Widowers.	Spinsters and Widows.
1871	57·2	62·3	52·9
1881	51·5	56·0	47·6
1891	49·8	54·6	45·7
1901	48·7	53·5	44·7
1911	46·3	50·8	42·5
1920	61·7	71·5	54·7
1921	52·1	60·4	45·8
1922	48·2	55·8	42·5
1923	46·6	53·9	41·1
1924	46·6	53·6	41·2
1925	46·2	53·3	40·9
1926	43·4	50·0	38·3
1927	47·5	54·8	41·9
1928	46·4	53·7	40·9
1929	47·7	55.2	41·9

Fluctuations of the general Marriage-rate in different Sections of the Country.—In Tables LXXIII and LXXIV comparison is made of the year's marriages and marriage-rates in large geographical sections of the country, and an analysis of recent rates in Registration Counties is shown in Table LXXV.

The determination of marriage-rates for localities is not wholly satisfactory for several reasons. In a large proportion of case the district of registration is the district of residence of only one of the parties and in some cases of neither. This difficulty, however, is probably of less moment in comparisons between large sections of the country than between smaller adjacent localities. Again, it has only been possible till now to tabulate marriages by registration areas, while the available estimates of population for years other than census years refer to administrative areas. The populations upon which the rates for such years are based have, therefore, to be derived from the estimated populations of the corresponding aggregates of administrative counties and county boroughs on the assumption of a ratio between the population of the registration and administrative areas. Any error so introduced is, however, probably small and not likely to have any appreciable effect upon the rates quoted.

Table LXXIII.—Marriages of each year in Geographical Sections of the Country : 1914–1929.

	North.	Midlands.	South.	Wales.	England and Wales.
1914 ..	100,926	87,695	85,728	20,052	294,401
1915 ..	115,694	109,844	113,868	21,479	360,885
1916 ..	90,287	84,895	87,322	17,342	279,846
1917 ..	83,151	78,761	80,356	16,587	258,855
1918 ..	92,381	87,798	89,928	17,056	287,163
1919 ..	125,863	111,180	107,971	24,397	369,411
1920 ..	136,443	114,942	102,930	25,667	379,982
1921 ..	110,864	97,218	91,831	20,939	320,852
1922 ..	101,335	91,657	86,610	19,922	299,524
1923 ..	99,640	89,483	83,152	20,133	292,408
1924 ..	100,400	92,035	84,252	19,729	296,416
1925 ..	99,301	92,172	84,882	19,334	295,689
1926 ..	89,777	89,146	84,617	16,320	279,860
1927 ..	102,245	97,750	88,867	19,508	308,370
1928 ..	98,642	96,381	89,499	18,706	303,228
1929 ..	102,058	101,130	90,981	19,147	313,316

The increase, which is shared amongst the four geographical sections of the country distinguished, is at its maximum in the Midlands and lowest in the South. The order of the sectional frequencies is generally associated with the masculinity of the several areas, the male rate being highest where the proportion of men in the population is lowest, thus accounting for the apparent contrasts produced by Wales on the one hand, which returns the lowest male frequency and the highest but one female frequency, or by the South on the other, where conditions are reversed. London females furnish the chief exception to this

rule in exhibiting the highest female marriage rate notwithstanding their excess of numbers in the general population. The range of variation amongst females is, as usual, much less than amongst males in the several sections ; this may be due to a greater constancy in the marriage force in the case of the weaker sex or it may signify little more than that they have the greater share in determining where the marriage is to take place.

From the county analysis in Table LXXV it will be seen that the 1929 marriage-rate was highest in Warwickshire, where it exceeded the mean for the country by 16·6 per cent. followed in order by London, Nottinghamshire, Derbyshire, Staffordshire and Durham, each with an excess in the neighbourhood of 11 per cent. Rural counties, with few exceptions, retain their customary place at the other end of the list. Insignificant declines are recorded in three English Counties, viz., Northamptonshire, Leicestershire and Hampshire and in seven of the thirteen counties in the Welsh section a fall is shown, the greatest being that from 38·2 to 33·0 per 1,000 unmarried in Radnorshire.

Table LXXIV.—Marriage-rate per 1,000 Unmarried Population aged 15 and over in Geographical Sections of the Country.

	Rate per 1,000 Unmarried Population aged 15 and over.			Ratio of local rate to England and Wales rate (taken as 1,000).		
	1921	1928	1929	1921	1928	1929
Males						
England and Wales	60·4	53·7	55·2	1,000	1,000	1,000
North	61·6	52·0	53·7	1,020	968	973
Midlands ..	60·1	54·5	56·6	995	1,014	1,025
South (including London)	62·2	58·1	58·8	1,030	1,082	1,065
Wales	49·5	42·6	43·7	820	794	792
London ..	71·7	68·4	69·0	1,187	1,273	1,250
Females						
England and Wales	45·8	40·9	41·9	1,000	1,000	1,000
North	48·7	41·2	42·4	1,063	1,008	1,012
Midlands ..	46·1	41·9	43·5	1,007	1,026	1,038
South (including London)	41·8	39·1	39·5	913	956	943
Wales ..	49·5	42·7	43·7	1,081	1,046	1,043
London ..	46·5	44·4	44·7	1,015	1,086	1,067

Marriage-rates by ages, which should provide an even more exact statement of the incidence and intensity of marriage, are shown in Table LXXVI. In connexion with this table, however, it is necessary to state that the ascertainment of age rates, in years other than those in which the distribution of the population by sex, marital condition and age is definitely known by means of a census enumeration, involves a degree of estimation of population detail in which the margin of error may be not insignificant, owing to the absence of a complete record of the movements between the single, married and widowed sections of the population. Nevertheless, no study of the marriage tendencies in a population can proceed without reference to these factors, and the possibility of the crude rates being made the basis of erroneous inferences justifies the inclusion of the following series of age rates, though those relating to the current inter-censal period must be regarded as provisional approximations to be confirmed or amended in accordance with changes shown by the next census analysis.

It will be observed from the last column of Table LXXVI, which compares the actual marriages of each year with a standard number, viz., those expected according to the age rates of 1921 and which makes allowance, therefore, for the changing age constitution of the unmarried population, that of the four sections distinguished, bachelors, widowers, spinsters and widows, such improvement as is shown by the 1929 frequencies is almost wholly confined to the single members of each sex. The widowers' aggregate is just above that of last year but negligibly so and in respect of widows a further stage in the almost unbroken decline since 1921 is recorded. On this basis of comparison the marriage frequencies of bachelors, widowers and spinsters are markedly higher than they were for a number of years before the war— particularly as regards bachelors—while the reverse is the case amongst widows whose frequencies are incomparably lower than any hitherto recorded for this class in the table.

From the age analysis shown in the earlier columns of Table LXXVI, it will be seen that the bachelors' increase is located in the age-group 25–35 and that amongst spinsters also, though an improvement is shown at all ages, the rise is highest between 20 and 35. The maintenance of the marriage-rate of young spinsters at a point well in excess of the corresponding rates of pre-war years, in spite of their diminished opportunities for marriage, has been a feature of the returns of recent years. With bachelors also, the rate for the age period 25–35, at which practically one half of the marriages of this class take place, is higher than that of any preceding year shown in the table while at all higher ages it is well in excess of pre-war experience.

Table LXXV.—Marriage-rates per 1,000 Unmarried Population—All Marriages and Marriages of Minors separately—in Registration Counties, 1921 and 1929.

Area.	All Marriages.				Minors.			
	Persons married per 1,000 unmarried population of the age of 15 and over.		Ratio to England and Wales rate.		Persons married per 1,000 unmarried population 15–21.		Ratio to England and Wales rate.	
	1921	1929	1921	1929	1921	1929	1921	1929
England and Wales ..	52·1	47·7	1,000	1,000	15·6	14·5	1,000	1,000
North	54·4	47·4	1,044	994	17·7	14·8	1,135	1,021
Cheshire	48·3	42·9	927	899	13·2	11·6	846	800
Lancashire	54·1	46·6	1,038	977	15·0	13·3	962	917
Yorkshire, West Riding	56·3	49·6	1,081	1,040	19·1	16·3	1,224	1,124
„ East Riding	56·1	48·3	1,077	1,013	19·7	16·8	1,263	1,159
„ North Riding	47·3	45·5	908	954	18·5	17·2	1,186	1,186
Durham	60·7	52·3	1,165	1,096	25·1	17·5	1,609	1,207
Northumberland ..	52·7	44·4	1,012	931	19·3	14·9	1,237	1,028
Cumberland	46·9	42·1	900	883	17·3	14·2	1,109	979
Westmorland	43·4	37·7	833	790	10·7	10·9	686	752
Midlands	52·2	49·2	1,002	1,031	14·8	14·4	949	993
Middlesex	50·2	49·0	964	1,027	11·8	13·1	756	903
Hertfordshire	44·7	40·4	858	847	12·2	11·2	782	772
Buckinghamshire ..	45·2	43·2	868	906	10·5	13·2	673	910
Oxfordshire	44·8	43·5	860	912	10·8	15·2	692	1,048
Northamptonshire ..	53·7	47·3	1,031	992	14·2	13·3	910	917
Huntingdonshire ..	54·9	42·7	1,054	895	18·0	16·4	1,154	1,131
Bedfordshire ..	50·7	45·8	973	960	14·2	13·4	910	924
Cambridgeshire ..	49·6	44·8	952	939	15·6	18·0	1,000	1,241
Essex	53·5	47·9	1,027	1,004	12·3	12·4	788	855
Suffolk	48·7	45·2	935	948	14·7	13·1	942	903
Norfolk	49·6	45·8	952	960	14·3	14·9	917	1,028
Gloucestershire ..	49·8	44·8	956	939	11·0	11·1	705	766
Herefordshire	42·7	38·9	820	816	8·5	14·2	545	979
Shropshire	45·7	42·6	877	893	10·7	11·8	686	814
Staffordshire	57·0	53·1	1,094	1,113	17·9	13·5	1,147	931
Worcestershire	49·2	47·3	944	992	13·6	14·1	872	972
Warwickshire	50·7	55·6	973	1,166	14·0	15·9	897	1,097
Leicestershire	58·9	50·8	1,131	1,065	17·5	15·4	1,122	1,062
Rutlandshire	39·4	37·0	756	776	6·2	9·8	397	676
Lincolnshire	54·3	50·8	1,042	1,065	19·4	19·3	1,244	1,331
Nottinghamshire ..	58·0	53·2	1,113	1,115	22·4	19·2	1,436	1,324
Derbyshire	56·9	53·1	1,092	1,113	18·2	17·2	1,167	1,186
South (including London)	50·0	47·3	960	992	13·6	14·3	872	986
London	56·4	54·2	1,083	1,136	15·5	15·4	994	1,062
Surrey	43·9	41·3	843	866	10·4	12·8	667	883
Kent	45·9	44·3	881	929	13·5	13·7	865	945
Sussex	39·4	38·1	756	799	11·5	13·1	737	903
Hampshire	48·5	44·9	931	941	13·7	15·0	878	1,034
Berkshire	46·1	44·1	885	925	11·8	12·9	756	890
Wiltshire	50·8	41·8	975	876	12·2	11·2	782	772
Dorsetshire	46·0	43·6	883	914	11·8	15·1	756	1,041
Devonshire	46·7	43·2	896	906	13·1	14·5	840	1,000
Cornwall	41·5	42·5	797	891	11·9	14·8	763	1,021
Somersetshire	46·0	41·8	883	876	11·0	11·3	705	779
Wales	49·5	43·7	950	916	16·4	14·2	1,051	979
Monmouthshire ..	53·8	50·5	1,033	1,059	18·5	15·5	1,186	1,069
Glamorganshire ..	56·6	48·4	1,086	1,015	19·8	15·9	1,269	1,097
Carmarthenshire ..	46·5	37·9	893	795	15·8	15·3	1,013	1,055
Pembrokeshire	43·3	38·7	831	811	12·2	15·5	782	1,069
Cardiganshire	29·6	25·0	568	524	5·7	9·5	365	655
Brecknockshire ..	46·0	37·6	883	788	11·8	12·3	756	848
Radnorshire	36·0	33·0	691	692	8·7	16·6	558	1,145
Montgomeryshire ..	38·9	31·4	747	658	8·7	7·8	558	538
Flintshire	40·8	42·3	783	887	8·5	11·4	545	786
Denbighshire	43·1	40·4	827	847	11·2	9·7	718	669
Merionethshire	34·4	31·2	660	654	6·9	6·8	442	469
Caernarvonshire ..	36·9	34·1	708	715	8·2	8·8	526	607
Anglesey	33·4	32·9	641	690	7·4	6·9	474	476

Table LXXVI.—England and Wales. Annual Marriage-rate per 1,000 Bachelors, Widowers, Spinsters, and Widows respectively at each of several Age Periods, 1871–1929.

NOTE.—The annual numbers of marriages have been taken as the average of the three years about each Census prior to 1921.

Year.	Annual marriage-rate per 1,000 in each age group.						Marriage-rate per 1,000 population over 15 in each class.	Ratio to corresponding rate for 1921	Marriage-rate which would have resulted had the 1921 age rates been in operation.	Ratio of actual marriage-rate (Col. 8) to rate in previous column (10).
	15—	20—	25—	35—	45—	55 and over.				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
				BACHELORS.						
1871	6·0	122·4	119·3	43·3	15·3	3·2	61·7	987	62·3	990
1881	4·6	106·8	112·4	40·5	14·3	3·0	55·7	891	62·4	893
1891	3·1	94·7	122·4	43·4	15·2	3·5	54·8	877	63·8	859
1901	2·5	85·9	123·7	44·2	14·6	3·3	54·7	875	66·6	821
1911	2·2	74·8	120·6	44·4	14·9	3·9	52·6	842	69·2	760
1921	3·4	94·4	161·1	61·6	19·7	5·5	62·5	1,000	62·5	1,000
1922	2·9	85·5	156·5	58·7	18·7	5·3	58·1	930	61·7	942
1923	2·6	82·7	155·8	57·1	17·2	4·7	56·3	901	61·1	921
1924	2·5	80·5	160·2	57·1	17·2	4·9	56·0	896	60·7	923
1925	2·4	78·5	163·2	57·6	17·0	5·4	55·7	891	60·6	919
1926	2·6	71·8	158·6	54·5	16·6	4·9	52·6	842	60·4	871
1927	2·8	76·5	180·2	58·1	17·5	6·2	57·8	925	60·5	955
1928	2·9	73·1	183·5	56·8	17·4	6·1	57·0	912	60·3	945
1929	2·9	73·1	198·1	56·6	17·1	5·6	58·8	941	60·2	977
				WIDOWERS.						
1871	11·5	229·0	288·5	181·5	88·3	15·9	65·8	1,475	56·0	1,175
1881	30·6	192·9	246·5	157·8	76·9	16·0	58·2	1,305	56·0	1,039
1891	14·1	153·4	231·7	151·1	74·7	15·5	53·4	1,197	53·7	994
1901	—	132·6	201·7	134·1	65·3	13·5	44·4	996	51·0	871
1911	—	121·6	171·2	117·9	59·4	12·7	36·9	827	47·4	778
1921	14·3	163·7	229·3	155·2	73·5	15·8	44·6	1,000	44·6	1,000
1922	—	136·0	204·7	140·5	65·7	14·3	39·3	881	43·7	899
1923	27·8	139·5	199·9	135·1	63·3	14·1	37·3	834	42·7	874
1924	—	119·6	195·6	132·3	64·4	14·1	36·8	821	42·1	869
1925	—	125·4	181·8	129·3	63·6	14·8	35·8	803	41·5	863
1926	—	88·5	164·7	121·7	59·5	13·5	32·5	729	40·7	799
1927	—	106·9	169·4	128·7	63·5	14·5	34·2	767	40·3	849
1928	—	93·3	157·1	118·8	61·6	14·0	32·0	717	39·7	806
1929	100·0	94·3	151·9	120·1	61·5	14·4	32·4	726	40·0	810
				SPINSTERS.						
1871	26·8	133·7	85·9	30·4	11·9	1·7	63·1	1,164	55·8	1,131
1881	21·5	121·9	80·6	26·3	10·4	1·6	56·9	1,050	55·8	1,020
1891	16·2	112·4	85·7	26·4	10·3	1·7	54·4	1,004	57·1	953
1901	12·9	104·9	88·6	25·3	9·1	1·5	53·0	978	58·6	904
1911	11·2	97·7	91·1	24·4	8·5	1·8	50·6	934	58·0	872
1921	14·8	114·4	100·0	25·6	8·9	2·0	54·2	1,000	54·2	1,000
1922	13·2	108·2	96·6	24·0	8·1	1·8	50·9	939	53·8	946
1923	12·5	108·2	93·6	23·1	7·8	2·0	49·8	919	53·5	931
1924	12·4	109·8	94·9	22·8	8·0	1·8	50·1	924	53·3	940
1925	12·7	110·4	94·1	22·9	7·9	2·1	50·0	923	53·1	942
1926	12·9	104·0	88·7	21·3	7·6	2·0	47·3	873	52·9	894
1927	14·3	114·4	97·3	23·1	8·2	2·4	51·9	958	52·9	981
1928	14·7	112·6	94·7	22·6	7·7	2·3	50·9	939	52·8	964
1929	15·4	116·0	97·9	22·9	8·0	2·4	52·5	969	52·7	996
				WIDOWS.						
1871	55·4	170·5	125·5	55·7	20·8	2·6	21·1	1,172	19·6	1,077
1881	56·6	155·3	114·5	50·2	18·6	2·6	18·2	1,011	18·5	984
1891	49·3	150·4	114·3	50·3	17·8	2·4	16·3	906	16·8	970
1901	54·9	140·7	115·9	48·9	15·6	2·1	14·4	800	15·6	923
1911	30·0	151·2	114·1	48·9	15·6	2·1	12·5	694	13·6	919
1921	36·1	191·4	120·3	50·6	17·6	2·5	18·0	1,000	18·0	1,000
1922	38·8	145·1	98·9	43·3	15·7	2·3	14·5	806	17·0	853
1923	13·0	143·4	86·2	37·7	14·9	2·2	12·5	694	16·3	767
1924	14·3	143·1	79·7	36·9	15·0	2·3	11·9	661	15·9	748
1925	46·2	123·9	69·8	33·6	14·8	2·4	10·9	606	15·5	703
1926	16·4	109·0	62·5	31·0	13·3	2·3	9·8	544	15·1	649
1927	48·4	96·9	62·9	31·6	14·6	2·6	10·1	561	15·0	673
1928	33·3	86·3	60·1	28·6	14·0	2·6	9·5	528	14·7	646
1929	28·6	89·1	56·4	27·4	13·8	2·6	9·3	517	14·8	628

The slight overall change in the widowers' frequency resolves itself mainly into a fall between the ages of 25 and 35, where, of course, the numbers involved are small, and a rise in the oldest group 55 and over. Except within the age-group 25–35, the widowers' rates are largely in excess of the corresponding bachelors' rates, so that it may be said that remarriages in the case of males are relatively more frequent than first marriages. The same was, until recently, true of females but the maintenance of the rates amongst young spinsters in conjunction with a heavy fall in respect of widows has destroyed the supremacy of the latter at ages below 35 and only at ages above are the widows' rates materially in excess. The age analysis serves to call attention to the misleading nature of the comparison suggested by the aggregate marriages per 1,000 population shown in column 8 of Table LXXVI ; owing to the concentration of the single population at the younger ages where marriages are numerous, and the widowed population at the later ages where they are few, the aggregate rate for the single of each sex appears to be vastly in excess of that of the widowed, whereas if allowance be made for the difference in their age constitutions, the relative positions are modified and in the case of males are in favour of the widowed.

Table LXXVII.—England and Wales : Proportions of First Marriages and Re-marriages in 1,000 Marriages, 1918–1929.

Year.	Men.		Women.		Bachelors who married.		Widowers who married.	
	Bachelors.	Widowers.	Spinsters.	Widows.	Spinsters.	Widows.	Spinsters.	Widows.
1918 ..	901	99	894	106	837	64	57	42
1919 ..	897	103	875	125	816	81	59	44
1920 ..	907	93	894	106	839	68	55	38
1921 ..	911	89	909	91	855	56	54	35
1922 ..	913	87	920	80	866	47	54	33
1923 ..	915	85	929	71	875	40	54	31
1924 ..	916	84	932	68	880	36	53	31
1925 ..	916	84	937	63	884	32	53	31
1926 ..	917	83	940	60	887	30	53	30
1927 ..	918	82	942	58	890	28	52	30
1928 ..	921	79	943	57	893	28	50	29
1929 ..	920	80	946	54	894	26	51	29

Tables LXXVIII and LXXIX continue the series shown in previous issues of the Review classifying the marriages of the year by age, the former giving the mean ages of the persons married in each of the possible combinations and the latter extending the analysis into a number of age-groups.

Table LXXVIII.—England and Wales : Mean Ages at Marriage, 1896–1929.

Males.

Year.	All Bride-grooms.	All Bachelor Bride-grooms.	All Widower Bride-grooms.	Bachelors with Spinsters.	Bachelors with Widows.	Widowers with Spinsters.	Widowers with Widows.
1896–1900 ..	28·38	26·63	44·73	26·35	34·12	41·74	49·72
1901–05 ..	28·52	26·90	45·08	26·62	34·09	42·28	49·88
1906–10 ..	28·76	27·19	45·71	26·93	34·70	42·95	50·64
1911–15 ..	29·01	27·49	46·62	27·18	35·73	43·80	51·37
1916–20 ..	29·77	27·92	46·84	27·42	34·78	44·42	50·25
1921–25 ..	29·18	27·47	47·37	27·08	35·73	44·67	51·87
1911 ..	29·03	27·46	46·42	27·19	35·19	43·49	51·46
1912 ..	29·12	27·56	46·77	27·27	35·75	43·96	51·67
1913 ..	29·11	27·56	46·65	27·25	35·68	43·91	51·35
1914 ..	28·94	27·40	46·66	27·05	35·90	43·79	51·39
1915 ..	28·87	27·49	46·61	27·12	36·15	43·86	50·98
1916 ..	29·70	27·93	47·32	27·47	36·20	44·79	51·07
1917 ..	30·04	28·04	47·71	27·52	35·63	45·22	51·23
1918 ..	30·08	28·14	47·74	27·59	35·43	45·38	50·88
1919 ..	29·81	27·99	45·72	27·46	33·36	43·40	48·85
1920 ..	29·20	27·51	45·73	27·04	33·28	43·31	49·24
1921 ..	29·19	27·48	46·60	27·03	34·35	44·06	50·57
1922 ..	29·21	27·54	46·91	27·12	35·24	44·31	51·20
1923 ..	29·15	27·46	47·34	27·09	35·64	44·60	51·98
1924 ..	29·16	27·45	47·72	27·08	36·31	44·95	52·39
1925 ..	29·17	27·42	48·29	27·07	37·13	45·43	53·19
1926 ..	29·14	27·39	48·53	27·04	37·58	45·75	53·47
1927 ..	29·13	27·39	48·77	27·05	38·10	45·80	53·94
1928 ..	29·10	27·37	49·16	27·03	38·42	46·11	54·45
1929 ..	29·08	27·33	49·19	27·02	38·45	46·26	54·45

Females.

Year.	All Brides.	All Spinster Brides.	All Widow Brides.	Spinsters with Bachelors.	Spinsters with Widowers.	Widows with Bachelors.	Widows with Widowers.
1896–1900 ..	26·21	25·14	40·70	24·62	32·64	35·96	44·99
1901–05 ..	26·36	25·37	40·37	24·88	32·99	35·76	45·09
1906–10 ..	26·59	25·63	41·06	25·14	33·63	36·51	45·82
1911–15 ..	26·77	25·75	41·65	25·27	34·23	37·40	46·57
1916–20 ..	27·14	25·81	38·66	25·24	34·30	34·73	44·74
1921–25 ..	26·69	25·57	40·83	25·00	34·79	36·43	46·48
1911 ..	26·80	25·81	41·74	25·32	34·13	37·01	46·63
1912 ..	26·84	25·85	41·89	25·36	34·25	37·44	46·69
1913 ..	26·80	25·78	41·57	25·29	34·23	37·22	46·59
1914 ..	26·68	25·61	41·64	25·12	34·28	37·53	46·57
1915 ..	26·75	25·71	41·42	25·28	34·28	37·78	46·39
1916 ..	27·17	25·91	40·73	25·36	34·58	36·79	45·85
1917 ..	27·27	25·89	39·66	25·28	34·54	35·40	45·48
1918 ..	27·29	25·92	38·84	25·33	34·59	34·82	44·86
1919 ..	27·16	25·81	36·69	25·24	33·77	33·07	43·36
1920 ..	26·79	25·54	37·36	24·99	34·02	33·56	44·14
1921 ..	26·73	25·52	38·83	24·95	34·40	34·83	45·26
1922 ..	26·71	25·57	39·93	25·02	34·53	35·81	45·87
1923 ..	26·66	25·57	40·94	25·01	34·74	36·35	46·66
1924 ..	26·67	25·59	41·69	25·02	34·95	37·19	46·89
1925 ..	26·66	25·59	42·74	25·00	35·34	37·95	47·70
1926 ..	26·63	25·56	43·11	24·97	35·44	38·42	47·90
1927 ..	26·64	25·58	43·81	25·00	35·62	39·05	48·36
1928 ..	26·59	25·53	44·31	24·95	35·77	39·48	48·87
1929 ..	26·56	25·53	44·52	24·93	36·00	39·48	49·03

Table LXXIX.—England and Wales : Marriages of Bachelors, Spinsters, Widowers and Widows at Various Ages per 1,000 Marriages at All Ages, 1886–1929.

Period.	All Ages.	Under 18 Years.	18–	19–	20–	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55 and up.	Age not stated.
						Bachelors.									
1886–90..	1,000	0	4	20	47	71	424	309	96	33	13	6	3	2	43
1891–95..	1,000	0	3	17	43	63	415	333	108	37	14	6	3	2	19
1896–1900	1,000	0	3	15	39	57	411	346	110	39	15	6	3	2	11
1901–05..	1,000	0	3	13	35	51	390	360	122	41	16	7	3	2	8
1906–10..	1,000	0	3	11	30	44	370	372	132	46	17	8	3	2	6
1911–15..	1,000	0	3	12	28	43	350	373	139	53	21	9	4	3	5
1916–20..	1,000	1	6	13	27	47	332	354	144	62	30	15	6	4	6
1921–25..	1,000	1	4	13	30	48	355	360	133	53	24	12	5	5	5
1921 ..	1,000	1	4	15	33	53	350	356	136	55	24	12	5	4	5
1922 ..	1,000	1	4	14	30	49	349	361	136	54	24	12	5	5	5
1923 ..	1,000	1	4	13	29	47	358	359	133	53	24	12	5	4	5
1924 ..	1,000	1	4	13	27	45	361	361	132	51	23	11	6	5	5
1925 ..	1,000	0	4	12	28	44	360	367	129	50	23	11	6	5	5
1926 ..	1,000	1	4	13	29	47	357	372	125	49	22	12	6	5	5
1927 ..	1,000	1	4	13	28	46	354	383	122	46	21	11	6	6	5
1928 ..	1,000	1	4	14	29	48	348	395	117	44	21	11	6	6	4
1929 ..	1,000	1	4	13	27	45	344	406	116	42	20	11	6	6	4
						Spinsters.									
1886–90..	1,000	9	37	72	97	215	417	219	62	23	10	5	2	1	46
1891–95..	1,000	7	31	66	94	198	425	241	70	25	11	5	2	1	22
1896–1900	1,000	6	27	59	89	181	434	253	74	26	11	5	2	1	13
1901–05..	1,000	5	23	53	82	163	428	272	79	28	12	5	2	1	10
1906–10..	1,000	5	21	48	75	149	420	284	87	30	12	6	2	2	8
1911–15..	1,000	6	23	47	70	146	402	292	94	34	14	7	3	2	6
1916–20..	1,000	6	23	48	72	149	402	275	94	39	17	9	4	3	8
1921–25..	1,000	7	25	51	72	155	411	280	87	32	14	8	4	3	6
1921 ..	1,000	7	27	54	76	164	406	274	86	33	15	8	4	3	7
1922 ..	1,000	7	26	51	73	157	404	282	88	33	15	8	3	3	7
1923 ..	1,000	7	25	49	72	153	412	279	87	33	14	8	4	3	7
1924 ..	1,000	7	25	49	70	151	414	281	87	32	14	8	4	3	6
1925 ..	1,000	8	25	49	70	152	413	281	86	32	14	8	4	4	6
1926 ..	1,000	9	28	50	70	157	410	279	86	32	14	8	4	4	6
1927 ..	1,000	9	27	50	69	155	412	282	84	31	14	8	4	4	6
1928 ..	1,000	11	28	51	71	161	411	281	81	31	14	8	4	4	5
1929 ..	1,000	12	28	50	70	160	410	284	80	30	14	8	4	4	6

Period.	All Ages.	Under 21 Years.	21–	25–	30–	35–	40–	45–	50–	55–	60–	65–	70 and up.	Age not stated.
					Widowers.									
1886–90..	1,000	0	13	81	133	151	139	120	94	70	53	27	15	104
1891–95..	1,000	0	12	76	132	153	148	126	106	74	55	29	18	71
1896–1900	1,000	0	10	73	131	158	150	136	109	84	56	30	19	44
1901–05..	1,000	0	10	68	130	155	152	136	116	83	62	32	20	36
1906–10..	1,000	0	8	61	123	153	152	141	119	90	62	37	24	30
1911–15..	1,000	0	7	53	109	151	150	146	125	97	68	41	30	23
1916–20..	1,000	0	7	54	105	138	151	155	130	101	70	39	26	24
1921–25..	1,000	0	8	55	109	137	135	136	126	104	79	51	36	24
1921 ..	1,000	0	8	61	116	142	143	138	120	99	73	46	31	23
1922 ..	1,000	0	8	55	115	142	138	139	121	102	74	48	34	24
1923 ..	1,000	0	8	55	110	140	133	136	124	102	80	51	37	24
1924 ..	1,000	0	7	54	107	129	134	135	132	104	82	52	40	24
1925 ..	1,000	0	8	50	98	128	127	132	133	113	87	58	41	25
1926 ..	1,000	0	6	48	96	123	131	136	131	112	88	59	44	26
1927 ..	1,000	0	6	51	91	121	129	132	135	115	87	63	47	23
1928 ..	1,000	0	6	50	89	115	123	136	133	114	91	70	49	24
1929 ..	1,000	0	6	52	88	114	125	131	131	119	93	68	49	24
					Widows.									
1886–90..	1,000	1	30	119	164	173	145	117	73	46	26	10	3	93
1891–95..	1,000	1	27	115	170	177	157	119	78	47	29	10	4	66
1896–1900	1,000	1	26	113	175	188	157	127	81	50	28	11	3	40
1901–05..	1,000	1	28	122	182	190	158	118	78	47	29	11	4	32
1906–10..	1,000	1	23	106	177	192	160	129	82	52	30	14	6	28
1911–15..	1,000	1	21	98	167	193	171	135	85	51	32	16	11	19
1916–20..	1,000	3	67	189	191	162	126	98	64	41	24	13	6	16
1921–25..	1,000	1	25	134	200	182	138	109	77	52	33	19	11	19
1921 ..	1,000	1	37	179	222	178	122	93	62	42	25	15	8	16
1922 ..	1,000	1	25	148	212	185	135	102	72	49	29	16	8	18
1923 ..	1,000	1	23	125	200	182	140	113	79	53	34	19	12	19
1924 ..	1,000	1	20	104	188	185	150	123	83	56	37	20	14	19
1925 ..	1,000	1	17	89	170	180	152	126	98	65	44	24	13	21
1926 ..	1,000	1	16	84	158	189	153	127	97	66	45	26	17	21
1927 ..	1,000	0	14	75	149	178	159	136	100	72	50	31	17	19
1928 ..	1,000	1	12	76	142	170	156	134	107	79	53	34	18	18
1929 ..	1,000	1	14	71	137	169	155	139	107	80	51	36	21	19

Marriages of Minors.—Of the males married during the year, 13,103, or 4·18 per cent., were under the age of 21, and of the females 47,521, or 15·17 per cent., as compared with 4·35 per cent., and 15·15 per cent. last year respectively. Females, who have always greatly outnumbered the males in this class—in the present year the ratio is about 3½ to 1—naturally show the highest rates and the greatest changes in the rate ; they formed 18·8 per 1,000 of the unmarried females aged 15–21 in 1911, were 26·6 in 1920, and are now 23·0, while the corresponding rates for males were 5·5, 8·8 and 6·2 per 1,000 respectively. The 1929 experience presents no exceptional features of statistical consequence ; it may be recalled, however, that as a result of the Age of Marriage Act, 1929, which raised the age of marriage of both sexes to 16 years, the number of persons married below the age of 16 which was 58 in 1928 (57 girls, 1 boy) dropped to 26 (all girls) in the portion of the current year prior to the passing of the Act.

Comparative figures are shown in Table LXXXI for the period back to 1901, before which the age-group 15–21 was not identified in the population returns ; an indication of the trend of youthful marriage-rates in earlier periods may be gained from the general age analyses in Table LXXX.

Table LXXX.—England and Wales: Minors Married per 1,000 Marriages at all Ages, 1876–1929.

Year.	Husbands.	Wives.	Year.	Husbands.	Wives.
1876–80 ..	77·8	217·0	1916 ..	36·2	129·1
1881–85 ..	73·0	215·0	1917 ..	41·7	134·2
1886–90 ..	63·2	200·2	1918 ..	42·6	129·0
1891–95 ..	56·2	182·6	1919 ..	43·7	129·4
1896–1900..	51·2	168·0	1920 ..	46·8	142·9
1901–05 ..	46·3	153·1	1921 ..	48·2	149·2
1906–10 ..	40·3	139·4	1922 ..	44·4	144·4
1911–15 ..	39·2	136·6	1923 ..	42·5	142·9
1916–20 ..	42·6	133·3	1924 ..	40·4	140·3
1921–25 ..	43·3	143·9	1925 ..	40·6	142·3
1912 ..	39·2	135·4	1926 ..	43·3	147·5
1913 ..	42·1	143·8	1927 ..	41·4	146·1
1914 ..	41·6	142·5	1928 ..	43·5	151·5
1915 ..	34·8	129·8	1929 ..	41·8	151·7

The proportions of males and females marrying under age are summarised for regions and counties in Tables LXXXII and LXXV. Much of the variation there shown is but a reflex of the incidence of the general marriage-rate (Tables LXXIV and LXXV) and regard must necessarily be had to the latter in considering how far the former provides evidence of local custom regarding early marriage. For example the highest male rate for 1929 shown in Table LXXXII is that of 7·3 per 1,000 in London which is over 17 per cent. above the average for the country at

Table LXXXI.—England and Wales : Annual Marriage-rate per 1,000 Unmarried and Widowed Persons in the age-group 15–21 at each period 1901 to 1929.

Year.	Males.		Females.	
	Rate.	Ratio to 1921.	Rate.	Ratio to 1921.
1901	6·7	87	21·6	92
1911	5·5	71	18·8	80
1920	8·8	114	26·6	114
1921	7·7	100	23·4	100
1922	6·4	83	20·9	89
1923	5·9	77	20·0	85
1924	5·6	73	19·8	85
1925	5·6	73	20·0	85
1926	5·6	73	19·7	84
1927	6·0	78	21·6	92
1928	6·2	81	22·1	94
1929	6·2	81	23·0	98

large ; reference to Table LXXIV, however, shows that the corresponding rate for all ages in this area was 25 per cent. in excess, so that under-age marriages, though apparently more numerous than elsewhere, may from this point of view be regarded as subnormal in frequency. Examined in this way the table does appear to indicate that early marriages are relatively more frequent in the North than in other sections and that in this respect conditions are little changed from those of pre-war years.

Table LXXXII.—Marriage-rate of Minors per 1,000 Unmarried Population aged 15–21 in Geographical Sections of the Country, 1921 and 1929.

	Males.				Females.			
	Rate per 1,000 Unmarried Population 15–21.		Ratio of local rate to England and Wales rate.		Rate per 1,000 Unmarried Population 15–21.		Ratio of local rate to England and Wales rate.	
	1921.	1929.	1921.	1929.	1921.	1929.	1921.	1929.
England and Wales.	7·7	6·2	1,000	1,000	23·4	23·0	1,000	1,000
North	9·3	6·5	1,208	1,048	26·1	23·4	1,115	1,017
Midlands ..	7·5	6·2	974	1,000	22·1	22·9	944	996
South (including London)	6·1	6·1	792	984	20·8	22·4	889	974
Wales ..	6·7	5·1	870	823	26·7	24·6	1,141	1,070
London ..	7·8	7·3	1,013	1,177	22·2	22·8	949	991

Buildings in which Marriages may be Solemnized.—At the end of the year 1929 the numbers of churches or chapels of the Established Church and of the Church in Wales and of registered buildings in which marriages could be legally solemnized, were as follows :—

Established Church and Church in Wales	16,377
All other religious denominations	19,819
Total	36,196

The increase upon the numbers at the end of the previous year was :—Established Church and Church in Wales 30, other religious denominations 256. The number of these buildings belonging to the various denominations is shown for each registration county in Table Q.

By the Acts 15 and 16 Vict. c. 36, and 18 and 19 Vict. c. 81, it was enacted that all places of religious worship not being churches or chapels of the Established Church, should, if the congregations desired, be certified to the Registrar-General, certification for public worship being a necessary preliminary to the registration of a building for the solemnization of marriages.

Table LXXXIII.

Denomination.	Buildings certified to the Registrar-General as meeting-places for Religious Worship.	Buildings registered for the Solemnization of Marriages.*
Roman Catholics	1,791	1,669
Wesleyan Methodists	7,721	4,761
Congregationalists	3,452	3,166
Baptists	3,272	2,960
Primitive Methodists	4,309	2,200
United Methodist Church	1,986	1,351
Calvinistic Methodists	1,366	1,065
Presbyterians	450	453
Unitarians	185	198
New Church	58	61
Catholic Apostolic Church	63	48
Countess of Huntingdon's Connexion	45	40
Salvation Army	1,326	293
Society of Friends	412	†
Jews	278	†
Other Denominations	4,050	1,554
All Denominations	30,764	19,819

* Of these buildings nearly 1,000 were certified before 1852, as Places of Meeting for Religious Worship to some other Authority than the Registrar-General and therefore are not included in the preceding column.

† It is not necessary for buildings to be registered for the solemnization of Quaker or Jewish marriages. Under section 31 of the Births, Deaths, and Marriages Registration Act (1836) Registering Officers of the Society of Friends and Secretaries of Jewish Synagogues who have been certified to the Registrar-General record the marriages in each case

The number of places of meeting for religious worship on the official register on 31st December, 1929, and the number of buildings registered for the solemnization of marriages are shown in Table LXXXIII.

The Marriage Act, 1898, provided that under specified conditions marriages might be solemnized in registered buildings in the presence of duly authorised persons without the attendance of a Registrar of Marriages. The governing bodies of some of the registered buildings have availed themselves of this provision, and at the end of the year 1929, the number of such buildings which had been brought under the operation of the Act, and so remained, was 6,045 out of the total of 19,819. The numbers of these buildings, and the denominations to which they belonged, were as follows :—

                2,509 Wesleyan Methodists.
                  870 Congregationalists.
                  957 Primitive Methodists.
                  611 Baptists.
                  526 United Methodist Church.
                  153 Calvinistic Methodists.
                  419 Other Denominations and Unsectarian.
                _____
                6,045 All Denominations.

Manner of Solemnization.—The classification of marriages by method of solemnization which was shown for each year prior to 1914, is now only carried out in respect of one year in each period of five years, and the tabulation relating to 1929 given on pp. 62 and 63 of Part II of this Review, and in the subjoined tables is thus the third that has appeared since 1914.

Table LXXXIV once again records an increase in civil at the expense of religious marriages ; the present proportion of 25·7 per cent. of the total marriages registered compares with 23·8 per cent. in 1924 and is the highest proportion of civil contracts hitherto recorded in the table.

Church of England marriages and those celebrated according to the rites of the Church in Wales and Monmouthshire, the disestablishment of which finally took effect on 31st March, 1920, numbered 170,080 and 6,033 respectively in 1929 and are analysed in detail in Table F.1. of Part II. They represent 54·3 per cent. and 1·9 per cent. of the total marriages and in common with Nonconformist marriages (11·4 per cent.) show declines from the corresponding proportions registered five years ago (55·7, 2·2, and 12·2 per cent. respectively). Roman Catholic marriages, on the other hand, have maintained the steady increase reported since 1909 and now account for 6·0 per cent. of the total. Of the Nonconformist marriages, the denominational distribution of which remains very similar to that of 1924, 29·2 per cent.

were Wesleyan Methodist, 20·1 Congregationalist, 16·2 Baptist, 11·6 Primitive Methodist, 8·3 United Methodist, 3·5 Calvinistic Methodist, and 11·2 of other denominations.

Of the 2,088 Jewish marriages contracted in the year 1929, 1,508 or 72·2 per cent. were registered in London, 168 or 8·0 per cent. in Manchester (Manchester North and Manchester South Registration Districts) and 92 or 4·4 per cent. in Leeds. Of the Jewish marriages in London, no fewer than 1,169, or 77·5 per cent. of the total, were registered in the four adjacent registration districts of London City, Hackney, Bethnal Green and Stepney.

Table LXXXV gives particulars as to the forms under which marriages have been contracted in the various registration counties during 1929. The table is of interest from the light it throws upon the distribution of the various religious bodies throughout the country. Thus London is seen to be the strong-hold of the Jews; the northern industrial counties, particularly Lancashire, of Roman Catholics; Wales and Cornwall, of Non-conformists. Church marriages (other than Roman Catholic or

Table LXXXIV.—England and Wales and London—Marriages : Manner of Solemnization, 1844—1929.

	Of 1,000 Marriages.															
	England and Wales.												London.			
	With Religious Ceremonial.													Not according to the rites of the Established Church.		
		According to the rites of the Established Church or Church in Wales.					Not according to the rites of the Established Church.									
								In Registered Places.								
Year.	Total.	Special Licence.	Licence.	Banns.	Superintendent Registrar's Certificate.	Not Stated.	Total in Established Church or Church in Wales.	Roman Catholics.	Other Christian Denominations.		Society of Friends.	Jews.	Civil Marriages.	According to the rites of the Established Church.	Roman Catholics.	Other Christian Denominations, including Society of Friends.	Jews.	Civil Marriages.
									Before Registrar.	Before Authorised Person.								
1844	974	0·1	113	643	12	139	907	17	48		0·4	1·3	26	943	19	17·1	7·4	13
1849	961	0·1	118	639	18	93	868	30	61		0·4	1·6	39	930	24	20·2	8·1	18
1854	952	0·1	132	658	24	26	840	49	61		0·3	1·8	48	898	49	22·0	8·4	23
1859	935	0·1	121	643	25	23	812	46	75		0·4	1·9	65	897	43	26·7	9·2	24
1864	919	0·1	110	629	24	19	782	48	87		0·3	1·9	81	884	49	31·6	8·7	27
1869	905	0·1	98	627	23	15	763	41	99		0·3	1·9	95	881	35	35·1	7·9	41
1874	895	0·1	87	637	19	4	747	40	105		0·2	2·3	105	870	33	39·1	9·2	49
1879	880	0·2	78	624	18	3	723	41	113		0·3	2·5	120	845	36	39·2	9·9	70
1884	869	0·3	60	628	17	2	707	43	116		0·3	2·9	131	816	38	39·1	12·1	95
1889	860	0·1	48	632	16	2	698	42	116		0·3	4·1	140	788	38	44·3	16·7	113
1894	852	0·1	41	630	13	2	686	42	119		0·3	5·0	148	759	37	42·4	21·5	140
1899	850	0·1	34	634	9	1	678	41	113	11	0·3	6·4	150	730	35	46·2	28·5	160
1904	821	0·2	30	604	7·0	0·7	642	41	101	30	0·3	7·0	179	676	39	46·3	35·5	203
1909	795	0·1	28	579	6·0	0·9	614	42	92	40	0·4	6·8	205	624	40	48·3	34·0	254
1914	759	0·2	42	536	4·4	0·8	583	47*	72	50	0·3	6·7	241	559	43	41·4	34·3	322
1919	769	0·2	124	469	2·0	1·8	597	52†	63	52	0·4	5·0	231	565	55	36·3	26·5	317
1924	762	0·1	54	520	1·8	1·8	578	55‡	62	60	0·3	6·7	238	544	55	41·5	36·1	324
1929	743	0·1	40	520	1·1	0·5	562	60§	53	61	0·3	6·7	257	517	60	39·5	35·6	348

* Including 0·4 per 1,000 before Authorised Person. ‡ Including 2·5 per 1.000 before Authorised Person.
† „ 1·4 „ „ „ § „ 3·0 „ „ „

Table LXXXV.—England and Wales—Marriages—

Registration Division.	Registration County.	Of 1,000 Marriages.								
			With Religious Ceremonial.						Not according to the rites of the Established Church or Church in Wales.	
			According to the rites of the Established Church or Church in Wales.						In Registered Places.	
									Total.	
		Total.	Special Licence.	Licence.	Banns.	Superintendent Registrar's Certificate.	Not Stated.	Total in Established Church or Church in Wales.	Before Registrar.	Before Authorised Person.
	England and Wales	743	0·1	40	520	1·1	0·5	562	110	64
I.	London	652	0·6	21	495	—	0·3	517	82	17
II.	Surrey	690	—	29	566	—	0·4	595	70	24
	Kent	743	0·1	34	612	0·2	0·5	647	60	36
	Sussex	728	0·2	41	582	0·2	1·5	625	83	20
	Hampshire	695	0·4	49	532	0·1	0·6	581	81	32
	Berkshire	753	0·4	43	617	—	0·8	661	60	32
III.	Middlesex	675	0·1	25	542	0·1	0·4	568	69	34
	Hertfordshire	759	—	32	606	—	0·4	639	82	38
	Buckinghamshire	788	—	47	618	—	0·6	666	85	35
	Oxfordshire	745	0·6	67	586	—	0·6	655	65	24
	Northamptonshire	766	—	41	539	0·3	—	580	54	131
	Huntingdonshire	812	—	68	649	—	—	717	65	31
	Bedfordshire	770	—	33	591	—	—	624	73	73
	Cambridgeshire	782	0·6	39	620	—	1·1	661	95	26
IV.	Essex	744	—	19	606	0·2	0·5	625	79	38
	Suffolk	763	—	37	616	0·3	0·3	653	80	29
	Norfolk	734	—	43	609	—	1·4	653	47	33
V.	Wiltshire	795	—	43	599	0·5	1·9	644	108	43
	Dorsetshire	798	—	52	620	0·6	1·1	673	89	36
	Devonshire	741	0·2	68	501	0·5	1·4	571	115	55
	Cornwall	807	0·4	102	374	—	0·8	477	186	144
	Somersetshire	833	—	69	589	0·5	1·1	660	116	57
VI.	Gloucestershire	737	—	41	569	0·4	1·5	611	85	40
	Herefordshire	764	—	88	580	—	4·0	672	75	16
	Shropshire	817	—	70	611	1·0	1·0	683	95	39
	Staffordshire	807	—	31	616	0·3	0·2	647	61	99
	Worcestershire	771	—	35	630	0·4	1·1	667	41	63
	Warwickshire	714	—	19	579	0·2	0·9	600	48	63
VII.	Leicestershire	730	—	40	519	0·7	0·7	561	57	112
	Rutlandshire	828	—	33	680	8·2	16·4	738	74	16
	Lincolnshire	782	—	56	598	0·2	1·7	655	49	77
	Nottinghamshire	736	0·1	40	576	—	0·4	616	49	70
	Derbyshire	784	—	54	551	0·4	0·2	606	74	104
VIII.	Cheshire	833	—	68	522	0·8	0·5	591	135	105
	Lancashire	829	—	51	460	3·8	0·0	515	204	103
IX.	Yorkshire, West Riding	790	—	35	543	1·7	0·3	579	89	117
	Yorkshire, East Riding (with York)	738	0·2	47	544	—	0·2	592	74	69
	Yorkshire, North Riding	793	—	67	500	—	1·2	568	145	77
X.	Durham	756	—	38	475	6·2	0·3	519	153	83
	Northumberland	728	—	46	467	1·3	0·5	515	160	51
	Cumberland	848	—	114	481	10·8	0·5	607	149	91
	Westmorland	871	—	163	557	—	2·2	723	99	49
XI.	Monmouthshire	707	—	42	348	—	1·1	391	264	51
	Glamorganshire	559	—	43	254	0·6	0·2	298	197	62
	Carmarthenshire	567	—	59	173	2·6	—	235	214	118
	Pembrokeshire	668	—	130	268	1·8	—	400	195	74
	Cardiganshire	661	—	106	120	4·8	—	231	346	84
	Brecknockshire	793	—	106	240	2·7	—	349	425	19
	Radnorshire	849	—	113	425	—	—	538	274	38
	Montgomeryshire	739	—	43	284	5·7	2·9	335	350	54
	Flintshire	841	—	55	415	—	—	470	348	23
	Denbighshire	677	1·9	40	336	2·8	2·8	384	242	50
	Merionethshire	713	—	55	163	—	—	218	455	41
	Caernarvonshire	626	—	72	191	1·0	1·0	265	325	35
	Anglesey	661	—	84	115	—	—	198	410	53

Manner of Solemnization in Registration Counties, 1929.

Roman Catholics.	Wesleyan Methodists.	Congregationalists.	Baptists.	Primitive Methodists.	United Methodists.	Calvinistic Methodists.	Other Denominations.	Society of Friends.	Jews.	Civil Marriages.	Registration County.	Registration Division.
60	33	23	19	13	9	4	13	0·3	6·7	257	England and Wales	
60	9	9	8	1	1	1	10	0·4	35·6	348	London	I.
40	13	18	11	2	1	0	8	0·4	0·4	310	Surrey	II.
28	19	17	21	2	1	0	8	0·2	0·1	257	Kent	
34	13	27	13	3	2	0	10	—	1·3	272	Sussex	
32	23	22	14	8	7	—	8	—	1·0	305	Hampshire	
24	22	11	16	13	—	—	7	—	—	247	Berkshire	
41	18	15	14	3	1	0	11	—	3·8	325	Middlesex	III.
25	27	35	20	5	—	—	8	0·4	—	241	Hertfordshire	
15	24	18	34	17	1	—	11	1·7	—	212	Buckinghamshire	
24	32	17	10	1	1	—	4	—	—	255	Oxfordshire	
11	41	57	50	14	1	—	11	—	—	234	Northamptonshire	
12	31	18	31	—	—	—	3	—	—	188	Huntingdonshire	
15	57	18	24	24	—	—	8	—	—	230	Bedfordshire	
14	23	17	43	16	3	—	5	—	—	218	Cambridgeshire	
36	19	27	16	3	5	—	10	0·2	1·8	256	Essex	IV.
9	17	39	24	9	3	—	8	0·3	—	237	Suffolk	
14	14	11	11	20	4	—	6	0·5	0·3	266	Norfolk	
24	37	20	25	29	6	—	10	—	—	205	Wiltshire	V.
18	39	34	18	9	2	—	6	—	—	202	Dorsetshire	
28	47	28	21	3	32	0	10	—	0·2	259	Devonshire	
11	168	9	5	15	119	—	3	—	—	193	Cornwall	
18	42	34	51	8	13	—	7	0·5	—	167	Somersetshire	
23	23	22	26	4	13	1	12	1·3	0·7	263	Gloucestershire	VI.
17	12	18	20	18	—	—	5	1·3	—	236	Herefordshire	
22	33	24	9	29	4	7	5	—	—	183	Shropshire	
51	39	12	10	23	17	0	7	0·1	0·3	193	Staffordshire	
20	26	15	16	13	3	—	11	—	—	229	Worcestershire	
48	19	13	17	4	3	0	8	0·5	1·7	286	Warwickshire	
27	39	21	34	32	3	—	13	—	—	270	Leicestershire	VII.
—	25	25	8	25	—	—	8	—	—	172	Rutlandshire	
14	57	11	7	28	7	—	3	0·2	1·3	218	Lincolnshire	
23	28	14	17	18	12	—	7	—	1·0	264	Nottinghamshire	
34	53	23	15	31	16	—	7	—	0·2	216	Derbyshire	
84	54	35	7	20	12	2	26	0·1	0·5	167	Cheshire	VIII.
150	51	30	14	16	17	1	29	0·2	6·5	171	Lancashire	
57	55	26	17	20	21	—	9	0·4	4·4	210	Yorkshire, West Riding	IX.
52	46	6	4	25	3	—	8	0·5	2·7	262	Yorkshire, East Riding (with York)	
98	54	16	10	32	4	—	8	1·5	2·1	207	Yorkshire, North Riding	
104	42	8	6	48	13	—	16	—	1·0	244	Durham	X.
97	27	9	5	25	12	—	36	0·7	2·7	272	Northumberland	
75	56	12	7	43	5	—	43	1·0	—	152	Cumberland	
24	56	22	4	28	2	—	13	—	—	129	Westmorland	
46	33	38	132	19	2	36	8	—	0·6	293	Monmouthshire	XI.
56	22	70	64	3	3	31	10	—	1·4	441	Glamorganshire	
17	10	133	107	—	—	54	10	—	—	433	Carmarthenshire	
19	18	79	104	2	—	47	—	—	—	332	Pembrokeshire	
5	14	137	94	—	—	156	24	—	—	339	Cardiganshire	
33	30	114	188	14	—	63	3	—	—	207	Brecknockshire	
9	—	19	264	19	—	—	—	—	—	151	Radnorshire	
9	103	66	49	14	—	155	9	—	—	261	Montgomeryshire	
64	57	95	13	20	8	75	38	—	—	159	Flintshire	
25	50	52	26	10	5	114	10	—	—	323	Denbighshire	
14	44	124	55	—	—	256	3	—	—	287	Merionethshire	
17	68	76	40	—	—	155	5	—	1·0	374	Caernarvonshire	
44	31	75	84	—	—	229	—	—	—	339	Anglesey	

Of 1,000 Marriages. With Religious Ceremonial. Not according to the rites of the Established Church or Church in Wales. In Registered Places.

Nonconformist), including both those of the Church of England, and those celebrated according to the rites of the Welsh Church, are more evenly spread, the latter being mainly confined to Wales and Monmouth and the former to English counties, though a certain number of exceptions to this division in the border counties are shown in Table F.1. of Part II. In England, the proportions vary between the somewhat exceptional extremes of 47·7 per cent. in Cornwall, and 73·8 per cent. in Rutland ; in Wales they are much smaller and more uneven in comparison, varying from 53·8 per cent. and 47·0 per cent. in Radnor and Flint to 19·8 per cent. and 21·8 per cent. in Anglesey and Merioneth.

Civil marriages are relatively more frequent in Wales than in England. The highest proportions were reached in Glamorgan and Carmarthen where they exceed 40 per cent. of the total ; in five other Welsh counties the proportion exceeded 30 per cent. In England the nearest approach to these figues is in London where the proportion stands at 34·8 per cent. but in only three other counties, Middlesex, Surrey and Hampshire does the figure rise above 30 per cent.

Divorces and Remarriages of Divorced Persons. — The annual numbers of marriages dissolved or annulled are shown in Table O and again in Table LXXXVI in terms of the persons involved, for each of the past ten years and the preceding quinquennia back to 1876-80.

During the year 1929, 3,333 divorces and 63 annulments were obtained, the number of persons involved being twice these figures, or a total of 3,396 of each sex. The present figure is materially less than the record achieved last year but it is higher than any previously recorded except in the year 1921 during the inevitable social re-adjustments which followed the termination of the war.

From Table LXXXVI it will be seen that in contrast to the decline in divorces the number of persons who on remarriage described themselves as divorced shows a further increase and is greater than the corresponding figure recorded for any earlier year. The regularity and continuity of the analysis generally confirms the incidence of remarriage tendencies in this class but it should be borne in mind that the numbers may understate the facts owing to misdescription of status in the registers.

In Table P are given certain particulars concerning the marriages in respect of which suits for dissolution or annulment were commenced during the year.

3,265 Petitions were filed at the Principal Registry in London and 732 at 23 District Registries. In respect of the former it will be seen that the most frequent duration of marriage at the date of the commencement of the proceedings is from 5-10 years

Table LXXXVI.—England and Wales : Annual Number of Persons Divorced, and of Divorced Persons who Remarried, 1876–1929.

Period.	Number of Persons Divorced.	Annual Number of Divorced Persons who remarried.							
		Total.	Men.	Women.	Divorced men marrying spinsters.	Divorced men marrying widows.	Divorced men and women inter-marrying.	Divorced women marrying bachelors.	Divorced women marrying widowers.
1876–80 ..	554	104	56	48	42	12	4	31	15
1881–85 ..	671	128	68	60	53	12	6	42	15
1886–90 ..	707	169	80	89	65	11	8	65	20
1891–95 ..	744	214	110	104	89	15	12	75	23
1896–1900 ..	980	345	172	173	138	24	20	126	37
1901–05 ..	1,126	509	262	247	205	38	38	181	47
1906–10 ..	1,247	693	356	337	276	53	54	253	57
1911–15 ..	1,312	820	411	409	330	50	62	309	69
1916–20 ..	3,115	1,264	683	581	525	127	62	439	111
1921–25 ..	5,467	3,050	1,708	1,342	1,316	295	194	976	269
1920..	6,180	2,370	1,314	1,056	981	272	122	795	200
1921..	7,044	2,878	1,592	1,286	1,182	330	160	939	287
1922..	5,176	3,374	1,913	1,461	1,457	360	192	1,062	303
1923..	5,334	3,008	1,679	1,329	1,307	279	186	1,002	234
1924..	4,572	2,903	1,627	1,276	1,267	275	170	931	260
1925..	5,210	3,088	1,729	1,359	1,367	229	266	944	282
1926..	5,244	3,124	1,710	1,414	1,325	231	308	995	265
1927..	6,380	3,576	1,924	1,652	1,509	244	342	1,133	348
1928..	8,036	4,125	2,268	1,857	1,764	302	404	1,299	356
1929..	6,792	4,427	2,408	2,019	1,886	307	430	1,357	447

(The column labelled "Number of Persons Divorced" is bracketed "Average" for the period rows 1876–80 through 1921–25.)

with an average of 219 for each of those years of duration, but the maximum is not of particular significance, for this period only accounts for 34 per cent. of the cases, there being 14 per cent. of shorter duration, while in 52 per cent. the marriages have subsisted for 10 years or more. Nearly 41 per cent. of the marriages in question were childless, and in a further 32 per cent. there was one child only.

LIVE BIRTHS.

The live births registered during 1929 numbered 643,673 corresponding to a birth-rate of 16·3 per 1,000 of the population living.

The number of births is 16,594 less than those of 1928, a decrease of 2·51 per cent.

The fall, which has been marked and almost continuous from the peak of the post-war boom reached in 1920, is thus carried a stage further and the rate for the year is the lowest on record in this country. The amount of the fall is not considerable in itself and probably exaggerates the current trend if, as suggested in last year's review, the 1928 figure was subject to some temporary inflation. The available returns for 1930 suggest that the 1929 position may be maintained in 1930 in which case it is conceivable that the trough of the post-war depression in the birth-rate may be located at or about present levels. But of course, further record will be required before such inference can be

established. As explained on pages 128-130 the present rate of recruitment is well below that which is necessary if a diminution of the total population is to be avoided in the future.

The birth-rate in this country attained its highest values during the period 1865–1880, when it exceeded 35 per 1,000 population, and from that time it diminished by gradual and practically continuous stages to 23·8 in 1914; it is now 16·3 per 1,000, or considerably less than half the maximum figure of 36·3 recorded in 1876, and having regard to current economic and industrial conditions appears likely for some time to remain low in relation to all earlier periods for which we have reliable records.

Table LXXXVII.—British and Foreign Birth-Rates (living born) per 1,000 total population.

Year.	England and Wales.	Scotland.	Northern Ireland.	Irish Free State.	Austria.	Belgium.	Czecho Slovakia.	Denmark.	Finland.	France.	Germany.	Hungary.	Italy.
1911	24·4	25·6	23·3		*31·4	22·9	—	26·7	29·1	*18·7	*28·6	34·2	*31·5
1912	24·0	25·9	23·0		*31·3	22·6	—	26·6	29·1	*18·9	*28·3	35·0	*32·4
1913	24·1	25·5	22·8		*29·7	22·4	—	25·6	27·2	*18·2	*27·5	33·8	*31·7
1914	23·8	26·1	22·6		23·3	20·4	—	25·6	26·9	†17·9	*26·8	34·2	*31·1
1915	21·8	23·9	22·0		18·4	16·1	—	24·2	25·4	†11·6	*20·4	23·6	*30·5
1916	21·0	22·9	21·0		14·7	12·9	—	24·4	24·1	†9·5	*15·2	17·0	*24·0
1917	17·8	20·3	19·8		13·9	11·3	—	23·7	24·3	†10·5	*13·9	16·5	*19·5
1918	17·7	20·5	20·0		14·1	11·3	—	24·1	23·8	†12·2	*14·3	16·3	*18·1
1919	18·5	22·0	20·0		18·0	16·3	22·4	22·6	19·2	†12·6	20·0	27·6	*21·4
1920	25·5	28·1	22·2		22·4	22·1	26·8	25·4	25·3	21·3	25·9	31·4	*31·8
1921	22·4	25·2	20·2		22·9	21·8	29·3	24·0	24·3	20·7	25·3	31·8	*30·3
1922	20·4	23·5	23·3	19·5	23·2	20·4	28·2	22·2	23·4	19·3	23·0	30·8	30·2
1923	19·7	22·8	23·9	20·5	22·5	20·4	27·3	22·3	23·7	19·1	21·1	29·2	29·4
1924	18·8	21·9	22·7	21·1	21·7	19·9	25·8	21·8	22·4	18·7	20·5	26·8	28·4
1925	18·3	21·3	22·0	20·8	20·6	19·8	25·1	21·0	22·3	18·9	20·7	28·3	27·8
1926	17·8	20·9	22·5	20·6	19·2	19·0	24·6	20·5	21·7	18·8	19·5	27·3	27·2
1927	16·6	19·8	21·3	20·3	17·8	18·3	23·3	19·6	21·2	18·1	18·4	25·7	26·9
1928	16·7	19·8	20·8	20·1	17·5	18·3	23·3	19·6	21·5	18·2	18·6	26·2	26·1
1929	16·3	19·0	20·4	19·8	—	18·1	22·4	18·6	—	17·7	17·9	24·2	25·2

Year.	Netherlands.	Norway.	Portugal.	Roumania.	Spain.	Sweden.	Switzerland.	Australia.	Canada.	New Zealand.	South Africa (Whites).	U.S.A. (Birth Registration Area).	Japan.
1911	27·9	25·7	38·6	*42·3	31·4	24·0	24·2	27·2	—	26·0	32·2	—	34·1
1912	28·1	25·4	34·6	*43·3	31·6	23·8	24·2	28·6	—	26·5	32·2	—	33·3
1913	28·3	25·1	33·0	*42·1	30·4	23·2	23·2	28·2	—	26·1	31·7	—	33·2
1914	28·3	25·1	31·9	*42·8	29·8	22·9	22·4	27·9	—	26·0	30·2	—	33·7
1915	26·3	23·6	31·9	*40·5	30·8	21·6	19·5	27·1	—	25·3	29·3	25·1	33·1
1916	26·6	24·2	31·1	—	29·0	21·2	18·9	26·6	—	25·9	29·3	25·0	32·7
1917	26·2	25·1	30·5	—	28·8	20·9	18·5	26·3	—	25·7	29·0	24·7	32·3
1918	25·0	24·6	28·5	—	29·1	20·3	18·7	25·0	—	23·4	28·6	24·6	32·2
1919	24·4	22·7	27·6	—	28·3	19·8	18·6	23·5	—	21·4	26·9	22·3	31·6
1920	28·3	26·1	33·7	33·2	30·0	23·6	20·9	25·5	26·6	25·1	29·0	23·7	36·2
1921	27·4	24·0	32·6	38·2	30·4	21·5	20·8	25·0	26·4	23·3	28·4	24·3	35·1
1922	25·9	23·1	33·6	37·2	30·5	19·6	19·6	24·7	25·2	23·2	27·5	22·5	34·2
1923	26·0	22·5	34·1	36·4	30·6	18·9	19·4	23·8	23·9	21·9	26·7	22·4	34·9
1924	25·1	21·1	34·1	36·7	30·0	18·1	18·8	23·2	23·7	21·6	26·3	22·6	33·8
1925	24·2	19·5	34·2	35·2	29·4	17·6	18·4	22·9	23·0	21·2	26·5	21·4	34·9
1926	23·8	19·3	—	34·8	30·0	16·8	18·2	22·0	24·8	21·1	26·2	20·6	34·8
1927	23·1	17·8	—	34·1	28·6	16·1	17·4	21·7	24·6	20·3	26·0	20·6	33·6
1928	23·3	17·7	—	—	29·7	16·0	17·3	21·3	24·5	19·6	25·8	19·7	34·4
1929	22·8	17·5	—	—	28·9	15·2	17·0	20·3	24·0	19·0	26·2	18·9	—

* Pre-war area.
† 77 departments.

The recent history of the birth-rate in this country may be compared with those of other countries of which particulars are at hand by reference to Table LXXXVII. The record extends over the period from 1911 to 1929 (for earlier years, *see* the Registrar-General's Annual Report for 1910) and covers therefore not only the years of the war period itself when the movements were quite abnormal, but a number of both earlier and later years sufficient to indicate the more prolonged changes which may probably be associated with the events of that period.

In common with the experience of this country the recorded movements in the past 12 months are almost consistently downward in character, South Africa being the only country to register an increase in a rate which was already amongst the highest recorded.

In all the countries listed except France and Japan the current rates show a large fall in comparison with pre-war experience, a fall which in respect of England and Wales is the more serious since the position of this country in relation to that of others was already a low one before the war, while to-day it is lower than any country save Sweden. The case of France is somewhat exceptional in that the current rate is at about the same level as it was before the war, so that instead of being outstandingly the worst in the series as formerly, it now ranks above England and Wales, Norway, Sweden, and Switzerland.

The crude birth-rate, or ratio of births to population of all ages, is a convenient form of statement when the object in view is to record the aggregate effect of all the various factors governing reproduction. It sums up the effects of all the influences governing the rate at which the community is reproducing itself and is, therefore, in conjunction with the corresponding form of mortality statement, the crude death-rate, the appropriate means of measuring natural increase. The number of births in the country, however, depends mainly upon the number of married women at the reproductive ages, and as they form less than one-eighth of the total population the variation of their numbers and ages over a period of time may be different from that of the whole population, in which case the crude birth-rates form but an imperfect measure of the changes in fertility, *i.e.*, of the rate of reproduction in proportion to the opportunity of reproduction. In the absence of any knowledge of the constitution of the general population the crude rate is often used as an index of fertility, but always on the implied assumption of a fixed proportion of potential mothers, an assumption which may only reasonably be made in respect of short periods of adjacent years.

In order to exclude the effect of varying population constitution and so obtain a truer statement of fertility change, the method of standardization, described in the 1922 Review and adopted in connexion with the statistics of the years 1922–1928,

Table LXXXVIII.—England and Wales.—Birth-rates and Fertility, 1871–1929.

	Births per 1,000 Total Population.	Ratio to 1921.	Births per 1,000 Married Women, 15-45.	Ratio to 1921.	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
Legitimate Births.					
1871 (1870–72) ..	33·3	1,556	292·5	1,659	1,504
1881 (1880–82) ..	32·3	1,509	286·0	1,622	1,481
1891 (1890–92) ..	29·4	1,374	263·8	1,496	1,382
1901 (1900–02) ..	27·5	1,285	235·5	1,336	1,250
1911 (1910–12) ..	23·4	1,093	197·4	1,120	1,102
1921	**21·4**	**1,000**	**176·3**	**1,000**	**1,000**
1922	19·5	911	160·7	912	909
1923	18·9	883	155·3	881	877
1924	18·1	846	148·4	842	835
1925	17·5	818	143·5	814	805
1926	17·0	794	139·8	793	783
1927	15·9	743	130·8	742	732
1928	16·0	748	131·0	743	730
1929	15·5	724	126·6	718	704

	Births per 1,000 Total Population.	Ratio to 1921.	Births per 1,000 Unmarried Women, 15-45.	Ratio to 1921.	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
Illegitimate Births.					
1871 (1870–72) ..	1·96	1,922	17·0	2,152	2,051
1881 (1880–82) ..	1·65	1,618	14·1	1,785	1,688
1891 (1890–92) ..	1·31	1,284	10·5	1,329	1,247
1901 (1900–02) ..	1·12	1,098	8·5	1,076	1,008
1911 (1910–12) ..	1·03	1,010	7·9	1,000	968
1921	**1·02**	**1,000**	**7·9**	**1,000**	**1,000**
1922	0·89	873	7·0	886	937
1923	0·82	804	6·5	823	863
1924	0·78	765	6·2	785	826
1925	0·74	725	5·9	747	790
1926	0·76	745	6·0	759	810
1927	0·74	725	5·9	747	795
1928	0·75	735	6·0	759	815
1929	0·74	725	6·0	759	804

	Births per 1,000 Total Population.	Ratio to 1921.	—	—	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.
All Births.					
1871 (1870–72) ..	35·3	1,576	—	—	1,527
1881 (1880–82) ..	34·0	1,518	—	—	1,490
1891 (1890–92) ..	30·7	1,371	—	—	1,376
1901 (1900–02) ..	28·6	1,277	—	—	1,238
1911 (1910–12) ..	24·5	1,094	—	—	1,095
1921	**22·4**	**1,000**	—	—	**1,000**
1922	20·4	911	—	—	910
1923	19·7	879	—	—	876
1924	18·8	839	—	—	834
1925	18·3	817	—	—	804
1926	17·8	795	—	—	784
1927	16·6	741	—	—	734
1928	16·7	746	—	—	733
1929	16·3	728	—	—	708

has been continued to cover the experience of 1929. It consists in (1) adopting the fertility curve or fertility ratios experienced in 1921 as a standard, (2) applying them age by age to the appropriate women in the population in question—for the years subsequent to 1921 estimates of such women have been made for the

purpose—and so obtaining a standard number of births, the numbers which would have occurred had the standard birth-rates been operating, and (3) calculating the ratio of the actual births recorded to the standard or expected number; the ratio of actual to expected is thus an index, comparing in an integral form the actual experience of each period or year with a common standard and, therefore, with one another.

Standardized comparisons are given in the last column of Table LXXXVIII both for census years prior to 1921 and for individual years of the present inter-censal period and the results are contrasted in that table with the more familiar and more approximate comparisons given by the crude birth-rates, whether calculated per 1,000 total population or per 1,000 married women between ages 15 and 45. Thus, in 1871, 1,504 legitimate births were recorded for every 1,000 that would have occurred under the standard fertility rates, the 1921 experience being in the aggregate only two-thirds of that of 50 years ago. From that time the rates diminished steadily and progressively as shown by the comparative figures, which are 1,481, 1,382, 1,250, and 1,102 at successive ten-year intervals between 1881 and 1911. Since 1921 the even more rapid drop, commented upon in dealing with the crude rates, is shown by the further reductions in the index, which for 1929 is 704, less than three-fourths of the 1921 standard. It will be observed that over the earlier years shown in the table the decrease in fertility was overstated by the crude rates, and that since 1911 the tendency has been in the other direction.

Illegitimate Births.—The live births registered during 1929 include 29,307 of illegitimate children, a decrease of 395 on the number in 1928, coincident with the decrease of 16,594 in total births. Illegitimate births have thus decreased by 1·3 per cent., and legitimate births by 2·5 per cent. As a result of these changes, the proportion of illegitimate to total births has risen slightly from 4·50 per cent. last year to 4·55 per cent., figures which compare with the minimum of 3·95 per cent. recorded for the period 1901–1905 and the maximum of 6·26 per cent. attained in 1918.

In addition to the crude rate comparison, an attempt has been made in Table LXXXIX to allow for the age incidence of the potential mothers in respect of illegitimate as well as legitimate births. The standard age factors employed are, as described in the 1922 Review, of less authority than those in respect of legitimate fertility, and serve mainly to complete the tables on the lines followed and already described for married women.

Birth-rates of Different Parts of the Country.—The birth-rates, total and illegitimate, of individual administrative areas tabulated in Table E are summarized in Table LXXXIX.

The method employed in earlier paragraphs for comparing the fertility of England and Wales in different years by the use of a standard fertility curve applies equally well of course to the comparison of fertility in different sections of the population of which the sex, age and marital condition constitution is known, and the crude rate comparisons are supplemented in this table by the addition of a series of figures in which variations in birth-rates due solely to differences in the age and marital condition proportions of the several populations have been, as far as possible, eliminated.

The first three columns of Table LXXXIX show for each of the specified divisions of the country the crude birth-rate of 1921, the ratio of the crude rate to that of the country as a whole, and the corresponding ratio obtained by the use of the standard fertility rates in conjunction with the census populations of that year. For later years local populations analysed by age and marital condition are not available, and an approximate correction to the crude rate comparison of 1929 shown in col. 5 has been made as follows :—The difference between cols. 2 and 3 has been regarded as a measure of the variation due to the constitution of the population and in the form of a factor, viz., col. 3 ÷ col. 2, has been applied to the crude 1929 birth ratio to obtain the corrected ratio shown in col. 6. The implied assumption that the constitutions of the local populations remain in constant relation to one another could not be maintained over a long period of time, but for the years of an inter-censal period corrected ratios obtained in this way will probably provide a truer picture of the incidence of fertility than that shown by the unadjusted crude rates.

For 1929 the birth changes in the geographical regions and types of area shown in the table are in consonance with the small decrease for the country as a whole and are generally of no significance. In all the divisions the legitimate rate has declined with maximum effect in Wales and in the smaller towns of the North ; in respect of the illegitimate rate the extremest movements are a rise from 0·57 to 0·64 per 1,000 in the county boroughs of Wales and a fall from 0·96 to 0·91 per 1,000 in the rural districts in that country.

The order of the regional rates, in which Wales now takes second place instead of the lead long previously held, is shown in the Table XC, which states the birth-rate of each section as a percentage of that of the whole country for each of the past ten years.

These percentages are based upon the crude rates and reflect therefore not only differences of fertility but also the varying incidence of sex, age, and marital condition in the populations from which they arise. When the latter is eliminated as is attempted in column 6 of Table LXXXIX, the standardized

Table LXXXIX.—England and Wales and Sections* of the Country.—Birth-rates, 1921 and 1929.

	1921.			1929.		
	Birth-rate per 1,000 Total Population.	Ratio to Rate for England and Wales. (Crude Rates.)	Ratio of Actual Births to those which would have occurred had the Standard age rates been operating.	Birth-rate per 1,000 Total Population.	Ratio to Rate for England and Wales. (Crude Rates.)	Ratio Corrected to Exclude Variations due to Differing Age and Marital Condition Incidence.†
	(1)	(2)	(3)	(4)	(5)	(6)
All Births—						
England and Wales	22·4	1,000	1,000	16·3	1,000	1,000
London	22·1	987	957	15·8	969	940
County Boroughs	23·5	1,049	1,004	17·0	1,043	998
Other Urban Districts	22·1	987	978	15·7	963	954
Rural Districts	21·4	955	1,060	16·2	994	1,103
North	23·7	1,058	1,025	16·9	1,037	1,005
County Boroughs	24·0	1,071	1,026	17·4	1,067	1,022
Other Urban Districts	23·1	1,031	996	15·8	969	936
Rural Districts	23·7	1,058	1,099	17·3	1,061	1,102
Midlands..	22·2	991	999	16·4	1,006	1,014
County Boroughs	23·6	1,054	1,000	16·9	1,037	984
Other Urban Districts	21·6	964	964	16·1	988	988
Rural Districts	21·2	946	1,054	16·4	1,006	1,121
South (including London)	20·4	911	941	15·2	933	964
County Boroughs	19·8	884	887	15·0	920	923
Other Urban Districts	18·9	844	898	14·4	883	940
Rural Districts	19·1	853	994	14·9	914	1,065
Wales	25·0	1,116	1,099	16·7	1,025	1,009
County Boroughs	24·9	1,112	1,035	17·2	1,055	982
Other Urban Districts	26·7	1,192	1,101	16·7	1,025	947
Rural Districts	22·6	1,009	1,143	16·2	994	1,126
Illegitimate Births—						
England and Wales	1·02	1,000	1,000	0·74	1,000	1,000
London	0·89	873	788	0·80	1,081	976
County Boroughs	1·09	1,069	1,034	0·77	1,041	1,007
Other Urban Districts	0·96	941	944	0·66	892	895
Rural Districts	1·07	1,049	1,197	0·81	1,095	1,249
North	1·12	1,098	1,091	0·76	1,027	1,020
County Boroughs	1·15	1,127	1,091	0·80	1,081	1,046
Other Urban Districts	1·04	1,020	1,030	0·64	865	873
Rural Districts	1·17	1,147	1,257	0·85	1,149	1,259
Midlands..	1·00	980	992	0·70	946	958
County Boroughs	1·04	1,020	975	0·70	946	904
Other Urban Districts	0·91	892	869	0·64	865	843
Rural Districts	1·07	1,049	1,234	0·81	1,095	1,288
South (including London)	0·92	902	877	0·76	1,027	999
County Boroughs	1·04	1,020	1,030	0·86	1,162	1,173
Other Urban Districts	0·91	892	864	0·69	932	903
Rural Districts	0·92	902	1,029	0·72	973	1,110
Wales	1·03	1,010	1,108	0·75	1,014	1,112
County Boroughs	0·77	755	751	0·64	865	860
Other Urban Districts	1·02	1,000	1,134	0·70	946	1,073
Rural Districts	1·22	1,196	1,320	0·91	1,230	1,358

* For constitution of Geographical Sections of the Country *see* page 7.

† Col. (6) has been obtained by multiplying col. (5) by the correcting factor referred to in the text viz., col. 3 ÷ col. 2.

Table XC.—Birth-rate of Different Sections of the Country per cent. of that of England and Wales, 1920–29.

—	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.	1929.
North ..	103	106	104	104	106	105	106	104	105	104
Midlands..	100	99	100	99	99	99	99	102	101	101
South ..	96	91	94	94	92	92	92	93	93	93
Wales ..	105	112	107	110	112	110	108	104	104	102

percentage ratios become 100·5, 101·4, 96·4 and 100·9 for the North, Midlands, South and Wales respectively, the Midlands occupying the highest position and the North being placed third out of the four instead of first as suggested by the crude rates. If the areas be examined from the point of view of urbanization the change from the crude to the standardized comparison is even more notable. By the crude rates the position of rural areas is distinctly understated, since from the point of view of fertility alone they are shown to be the most productive of all areas, not only for the country as a whole, but for each of the four geographical sections. Similarly in the urban districts of the South, which yield the lowest rate shown in the table, part of the lowness is due to the unfavourable constitution of the population, for the ratio to the England and Wales rate is raised from 88·3 per cent. to 94·0 per cent. upon standardization. On the other hand the towns of Wales and in a lesser degree London and the county boroughs of the North and Midlands are overfavoured by a comparison limited to the crude ratios alone.

The extent of illegitimacy in different classes of area and parts of the country may be gathered from the lower half of Table LXXXIX. Except for a wider range of variation generally the distribution is not significantly different from that of all births.

The highest rates occur as a rule in the rural districts. It will be seen that whereas for all births the rural aggregate rate is 10·3 per cent. above the mean, for illegitimate only it is 24·9 per cent. above. The table confirms generally the view expressed in earlier reports, when only crude rate comparisons were available, that such rates understated the position in rural districts and overstated it in the South.

Sex Proportions at Birth.—Births of males in England and Wales in 1929 numbered 328,642, and those of females 315,031 ; the proportion of male to female births was 1,044, 1,021, and 1,043 to 1,000 for legitimate, illegitimate, and total births respectively. The corresponding proportions for total births in each year from 1890 onwards and in groups of years since the commencement of registration are shown in Table C (Part II) ; the extreme range

during the preceding 50 years was from 1,032 per 1,000 in 1898 to 1,060 in 1919. During this period the highest ratio recorded prior to the war was 1,042 in 1878. The lowest point touched since 1919 was 1,041 in 1926.

The extent to which different classes of area or portions of the country contribute to the preponderance of male births is shown in Table XCI.

Table XCI.—Male Births per 1,000 Female Births, 1929.

—	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	1,043	1,045	1,046	1,040	1,037
London	—	—	—	1,038	—
County Boroughs	1,041	1,047	1,039	1,021	1,030
Other Urban Districts	1,042	1,039	1,044	1,051	1,025
Rural Districts	1,052	1,050	1,057	1,043	1,060

There is however much variability in the relative incidence of masculinity, and the figures for 1929 afford no reliable guide to the ascertainment of any characteristic differences.

STILLBIRTHS.

The stillbirths registered during 1929 numbered 26,847 in all, 14,961 being males and 11,886 females ; the numbers representing 40, 44 and 36 per 1,000 total births or 42, 46 and 38 per 1,000 live births respectively. The total compares with the slightly higher figure of 27,580 recorded last year but the proportion per 1,000 total births, viz. 40, remains unaltered.

Prior to 1st July, 1927, the date on which stillbirth registration became operative in this country under the Births and Deaths Registration Act, 1926, the only record of stillbirths in England and Wales was that obtained from notifications received by Medical Officers of Health. These were published in the successive reports, from 1919 onwards, of the Chief Medical Officer to the Ministry of Health and were summarised in the 1927 Annual Review.

The constitution of a stillbirth is governed in this country by the definition laid down in the above mentioned Act, which is as follows :—

"'Stillborn' and 'stillbirth' shall apply to any child which has issued forth from its mother after the twenty-eighth week of pregnancy and which did not at any time after being completely expelled from its mother breathe or show any other signs of life."

The criterion is thus the absence of life, or of signs of life, at the point of time of complete expulsion and is independent of separation or of viability. The only factor restricting its general application is that of the minimum duration imposed in respect of the period of gestation. In reference thereto it should be noted that the introduction of a time limit, inevitable in the case of a stillbirth, does not affect in any way the existing practice regarding live births; a child which after complete expulsion shows any signs of life is regarded as a live birth, even if the birth occurs before the end of the twenty-eight weeks, and is registrable as such in accordance with the ordinary procedure.

With regard to the effect of registration upon the statistics, it may be observed that, unlike live-birth registration, where the period between birth and registration is frequently as much as a month or more, stillbirth registration is linked administratively with the burial procedure, and the necessity of early disposal of the body automatically reduces the delay to a minimum and thereby secures a close correspondence between the records and facts in a given period. The record will thus, like that also of infant deaths, be slightly out of phase with the corresponding live-birth record with which each of them is usually compared.

Table XCII.—Stillbirths, 1929.

Area.	Stillbirths per 1,000 total births.					Stillbirths per 1,000 total births and Live Births per 1,000 population expressed in relation to corresponding rate for England and Wales taken as 1,000.				Stillbirths per 1,000 total births and Infant Mortality per 1,000 live births expressed in relation to corresponding rate for England and Wales taken as 1,000.		
	Total.	Legitimate.		Illegitimate.		Stillbirths.		Live Births.		Still-births.	Deaths under 4 weeks.	Deaths under 1 year.
		Males.	Fe-males.	Males.	Fe-males.	Legit.	Illegit.	Legit.	Illegit.			
All Areas :—												
England and Wales	40	43	36	60	47	1,000	1,000	1,000	1,000	1,000	1,000	1,000
North	44	47	40	64	53	1,104	1,093	1,039	1,027	1,100	1,151	1,216
Midlands	37	40	33	55	43	929	920	1,013	946	925	939	905
South (inc.London)	34	36	30	56	42	845	920	929	1,027	850	818	838
Wales	55	59	48	75	55	1,373	1,211	1,026	1,014	1,375	1,151	1,041
London	32	35	27	58	41	794	925	968	1,081	800	788	959
County Boroughs :—												
England and Wales	42	45	38	60	49	1,043	1,013	1,045	1,041	1,050	1,061	1,162
North	44	47	39	62	53	1,094	1,080	1,071	1,081	1,100	1,121	1,297
Midlands	38	41	34	55	46	954	940	1,045	946	950	939	1,041
South	36	39	33	58	35	904	875	916	1,162	900	848	797
Wales	54	58	51	61	50	1,378	1,037	1,071	865	1,350	1,121	1,122
Other Urban Districts :—												
England and Wales	41	44	38	58	48	1,038	993	974	892	1,025	1,000	932
North	47	49	43	71	57	1,170	1,194	981	865	1,175	1,151	1,149
Midlands	36	39	33	46	43	916	832	1,000	865	900	939	851
South	35	36	33	54	41	873	896	884	932	875	848	757
Wales	56	60	51	72	53	1,416	1,161	1,032	946	1,400	1,091	986
Rural Districts :—												
England and Wales	39	42	34	63	47	967	1,030	994	1,095	975	1,030	878
North	40	42	36	57	46	990	959	1,058	1,149	1,000	1,151	1,068
Midlands	37	39	32	66	42	916	1,007	1,006	1,095	925	970	797
South	36	37	32	53	51	883	976	916	973	900	879	730
Wales	52	60	42	85	60	1,299	1,349	987	1,230	1,300	1,242	1,054

The distribution of the total according to sex, legitimacy and geographical incidence is shown in Table 14a of Part I of the Statistical Review, and is summarised in rate form in Table XCII; in the latter have been included columns from which comparisons may be made between the incidence of still-births on the one hand and that of live births or of infant mortality on the other.

This year's summary generally confirms the inferences derived from the first eighteen months' experience provided by the 1926 Act. Thus, wherever the numbers are large enough to form a satisfactory basis of fact, the frequency of stillbirth amongst males is shown to be definitely greater than it is amongst females. The male excess is rather greater than that of last year and it is maintained with considerable uniformity throughout the several sections distinguished. Similarly, as between legitimate and illegitimate births, the latter regularly exhibits the higher rates, the amount of the excess being on a somewhat larger scale than that indicated in the comparison between the sexes.

As regards areal comparison, Wales appears to return the highest frequencies; taken as a whole or by various degrees of urbanization, the rates are definitely higher than their counterparts in any of the English sections. Amongst the latter, the frequencies decrease progressively from the North, where the rate is about 10 per cent. in excess of the general average, to the South where it is 15 per cent. below. The rates tend on the whole to increase with urbanization but in this the progressions are not so uniform, the outstanding exception being the case of London which returns the lowest rate in the list.

The relative positions in the various portions of the country and the close association in this respect between stillbirths and infantile deaths are brought out in the columns of the table in which the stillbirth rate and infantile mortality rate of the year are expressed in relation to that of the country at large, the latter being taken as 1,000 in each case. The similarity of incidence is marked in comparisons made with the mortality of the full first year of life, but the parallelism is found to be even closer when the comparison is restricted to the deaths occurring within the four weeks immediately following birth.

Some idea of the local variation of stillbirths may be obtained from the following table which shows the boroughs and the county urban and rural aggregates exhibiting the highest and lowest rates per 1,000 total births in 1929. Areas in which less than 20 stillbirths were registered have been omitted.

Metropolitan Boroughs.		County Boroughs.		Urban Aggregates (Excluding C.Bs.)		Rural Aggregates.	
Highest.							
Holborn	58	Merthyr Tydfil	69	Merioneth	71	Cardigan	68
Paddington	42	Oldham	65	Brecon	68	Carmarthen	64
Camberwell	38	Dewsbury	61	Pembroke	65	Caernarvon	61
Stepney	38	Swansea	61	Carmarthen	62	Montgomery	56
Stoke Newington	37	Burnley	60	Glamorgan	58	Glamorgan	55
Lowest.							
Fulham	28	East Ham	31	Essex	32	Buckingham	28
Greenwich	27	Hastings	31	Surrey	31	Northampton	28
Battersea	26	Great Yarmouth	30	Berkshire	29	Oxford	27
Finsbury	26	Burton-upon-Trent	28	Sussex East	29	Pembroke	27
Lewisham	26	Smethwick	28	Cambridge	27	Sussex West	20

NATURAL INCREASE.

In 1929 the excess of live births over deaths registered in England and Wales was 111,181, as compared with 199,878 in 1928, 169,563 in 1927 and 240,759 in 1926. The decline, which is to some extent due to the rather exceptional mortality of the year, has thus reduced the natural increase figure to a position lower than any hitherto recorded outside the worst of the war years, viz., 1918.

From the comparable series of rates per 1,000 living population given in Table XCIII it will be observed that, though there is rather greater irregularity in the successive rates of natural increase, they have, over the whole range of years there given, followed on the whole a similar course to those followed by both birth and death-rates, and have declined with advancing years. The present rate of natural increase, viz., 2·9 per 1,000 population compares with a figure of approximately 10 per 1,000 in the years immediately preceding the war and over 14 per 1,000 in the period 1876–1880 when the birth-rate was at about its maximum. Stated in these terms the curve of natural increase expresses no more than that the crude birth-rate has hitherto been greater than the crude death-rate and that the decline in the former has advanced at a greater rate than the fall in the latter. From the general continuity of the series it may be inferred that the number of births will continue to exceed the deaths for some time, and that, apart from the results of migration, the population will continue to increase, though, naturally, at a somewhat slower pace.

What must not be inferred from mere excesses of births over deaths or from their alternative expressions as rates per 1,000 total population, is that the perpetuation of current conditions regarding fertility and mortality would be sufficient to ensure a continuous increase in the national population, both now and in the remote future.

Table XCIII.—England and Wales. Natural Increase of Population per 1,000 living, 1876-1929.

	Mean Annual Live Birth-rate per 1,000 living.	Mean Annual Death-rate per 1,000 living.	Mean Annual Rate of Increase by excess of Births over Deaths per 1,000 living.
1876—1880.. ..	35·3	20·8	14·5
1881—1885.. ..	33·5	19·4	14·1
1886—1890.. ..	31·4	18·9	12·5
1891—1895.. ..	30·5	18·7	11·8
1896—1900.. ..	29·3	17·7	11·6
1901—1905.. ..	28·2	16·0	12·2
1906—1910.. ..	26·3	14·7	11·6
1911—1915.. ..	23·6	14·3*	9·3
1916—1920.. ..	20·1	14·4*	5·7
1921—1925.. ..	19·9	12·2	7·7
1907..	26·5	15·1	11·4
1908..	26·7	14·8	11·9
1909..	25·8	14·6	11·2
1910..	25·1	13·5	11·6
1911..	24·4	14·6	9·8
1912..	24·0	13·4	10·6
1913..	24·1	13·8	10·3
1914..	23·8	14·0	9·8
1915..	21·8	15·7*	6·1
1916..	21·0	14·3*	6·7
1917..	17·8	14·2*	3·6
1918..	17·7	17·3*	0·4
1919..	18·5	14·0*	4·5
1920..	25·5	12·4*	13·1
1921..	22·4	12·1	10·3
1922..	20·4	12·8	7·6
1923..	19·7	11·6	8·1
1924..	18·8	12·2	6·6
1925..	18·3	12·2	6·1
1926..	17·8	11·6	6·2
1927..	16·6	12·3	4·3
1928..	16·7	11·7	5.0
1929..	16·3	13·4	2·9

* For the years 1915 to 1920 inclusive the figures upon which these rates are based relate to civilians only.

The population as a whole is gradually getting older, and must continue to do so for many years to come, owing to the heavy falls which have occurred in both fertility and mortality during the past half century. The older sections where the death frequencies are naturally highest are becoming relatively more and more numerous. The crude death-rate (deaths per 1,000 population) must in consequence tend to rise in relation to the true underlying mortality and will thus encroach on the already much diminished margin of natural increase recorded above for recent years. The encroachment would be delayed by a real

decrease in mortality or an increase in fertility. But of the proximity of the latter there is no evidence at all; while as regards the former, from the very nature of the case, the lower mortality falls the less room is there for it to fall further, and any practicable assistance from this source is, therefore, being gradually exhausted as the years go by. Moreover any change in the death rate can have but a temporary effect on a situation which is primarily governed by the rate at which the population is being replenished at its source.

It was suggested in the 1926 Review that if we take as the standard of population stability, not the maintenance of a constant total but the production of a standard number of births, the standard being that number which would in their turn and at the rate they themselves were born produce offspring numerically equal to themselves, the standard would correspond to a crude birth rate based on the present population of about 19½ per 1,000. This level has not been reached since 1923—the rate for the present year is only 84 per cent. of the said standard—and the inevitable inference must be drawn that, while there is no improvement, the future growth of population will tend to be at an ever diminishing rate up to the stage at which births and deaths are equal, the latter thereafter gaining the ascendancy with a consequent decline in population.

Table XCIV shows for 1929 the rate of natural increase in various sections of the country, representing the combined effect of the several sectional birth and death-rates.

Table XCIV.—Natural Increase per 1,000 living, 1929.

—	England and Wales.	North.	Midlands.	South.	Wales.
All Areas	2·9	2·6	3·6	1·6	4·2
London	—	—	—	1·6	—
County Boroughs ..	2·6	2·3	3·3	1·1	4·3
Other Urban Districts	2·8	1·9	4·0	1·4	4·5
Rural Districts ..	3·5	5·0	3·6	2·2	3·3

GREAT BRITAIN AND IRELAND.

Population.—The first complete census of the United Kingdom was taken in 1821, when the population numbered 20,893,584 persons; during the 100 years 1821–1921 this number has increased by about 126 per cent., the sum of the final census figures for Great Britain and of the estimated population of Ireland in June, 1921, amounting to 47,123,196. The populations of the several portions of the United Kingdom for each census year from 1821 and for individual years from 1890 are set out in Table A.

Table XCV.—Great Britain and Ireland. Vital Statistics
1919–1928 and 1929.

—	Great Britain and Ireland.	England and Wales.	Scotland.	Northern Ireland.	Irish Free State.
Estimated Population in the middle of the year 1929 (in thousands).					
Males	23,411	18,969	2,344	604	1,494
Females	25,273	20,638	2,540	646	1,449
Persons	48,684	39,607	4,884	1,250	2,943
Marriages.					
1929	367,334	313,316	32,999	7,426	13,593
Persons married per 1,000 living :—					
1919–1928 ..	15·7	16·3	14·8	12·8	9·9
1929	15·1	15·8	13·5	11·9	9·2
Births.					
1929	820,243	643,673	92,880	25,410	58,280
Per 1,000 living :—					
1919–1928 ..	19·9	19·5	22·5	22·8	20·4
1929	16·8	16·3	19·0	20·3	19·8
Deaths.					
1929	666,222	532,492	70,917	19,822	42,991
Per 1,000 living :—					
1919–1928 ..	12·7	12·3*	13·9	15·7	14·9
1929	13·7	13·4	14·5	15·9	14·6
Deaths of Infants under 1 year.					
1929	62,205	47,868	8,061	2,174	4,102
Per 1,000 births :—					
1919–1928 ..	78	76	91	84	72
1929	76	74	87	86	70

* For the years 1919 and 1920 the figures on which this rate is based relate to civilians only.

Marriages.—The marriages during the year 1929 numbered 367,334, corresponding to a rate of 15·1 persons married per 1,000 of the total population. This rate was 0·4 above the corresponding rate in 1928, and 0·6 per 1,000 below the average rate in the ten years 1919–1928.

Births.—The births registered in the year 1929 numbered 820,243, and were in the proportion of 16·8 per 1,000 of the total population. This rate was 0·5 below the corresponding rate in 1928, and 3·1 per 1,000 below the average in the ten years 1919–1928.

Deaths.—The deaths registered in the year 1929 numbered 666,222, and were in the proportion of 13·7 per 1,000 of the total population. This rate was 1·6 per 1,000 above the corresponding rate in 1928, and 1·0 per 1,000 above the average in the ten years 1919–1928.

Infant Mortality.—The deaths of infants under one year of age during the year 1929 numbered 62,205, representing a rate of 76 per 1,000 live births. This rate was 8 per 1,000 live births above that recorded in 1928 and 2 per 1,000 below the average in the ten years 1919–1928.

BIRTHS AND DEATHS AT SEA.

Marine Register Book.—In accordance with the Births and Deaths Registration Act of 1874 and the Merchant Shipping Act of 1894, Commanding Officers of ships trading to or from British ports are required to transmit returns of all births and deaths occurring on board their ships to the Registrar-General of Shipping and Seamen, who furnishes certified copies of such returns to the Registrars-General of Births and Deaths for England, Scotland, Northern Ireland and the Irish Free State. Similar returns are furnished to the Registrars-General of Births and Deaths by Officers in command of His Majesty's ships. These returns of births and deaths at sea constitute the "Marine Register Book." During the year 1929 this register was increased by the addition of 133 entries of birth and 1,790 entries of death.

REGISTRATION OF BIRTHS, DEATHS AND MARRIAGES.

Progress of Registration.—The names in the alphabetical indexes of births, deaths and marriages recorded in the national registers of England and Wales were increased during the year 1929 by 1,802,797, this addition raising the total of names in the indexes, which at the end of 1929 embraced a period of 92½ years, to 156,214,484 (Table S).

Searches and Certificates.—Besides the certified copies of the registered births, deaths and marriages kept in England and Wales pursuant to the Registration Acts, a large number of other registers and records are deposited in this Office under statute or other arrangement. A revised list of these various registers and records will be found on pages 149–155 of the Review for 1925. Searches may be made in any of these registers, and certificates obtained on payment of the prescribed fees.

Table XCVI, affords an indication of the extent to which the copies of the records kept in this Office have been utilized by the public for legal evidence of births, deaths and marriages since 1866.

Table XCVI.

Years.	Total Searches.	Gratui- tous Searches.	Searches paid for by Fees.	Certifi- cates Issued.	Amount Received.		
					£	s.	d.
1866 (52 weeks)	12,135	—	12,135	10,017	1,860	15	6
1875 (52 weeks)	26,356	—	26,356	20,282	3,879	15	6
1885 (52 weeks)	36,450	—	36,450	27,682	5,317	13	6
1895 (52 weeks)	53,289	—	53,289	35,727	7,200	12	6
1905 (52 weeks)	65,142	—	65,142	50,310	9,611	9	0
1906 (52 weeks)	64,340	—	64,340	49,429	9,458	6	0
1907 (52 weeks)	69,249	—	69,249	53,058	10,194	9	0
1908 (53 weeks)	72,370	—	72,370	54,870	10,550	8	0
1909 (52 weeks)	132,169	58,626*	73,543	54,674	10,568	8	0
1910 (52 weeks)	126,716	51,347	75,369	57,019	10,939	5	6
1911 (52 weeks)	140,496	65,491	75,005	56,347	10,875	6	0
1912 (52 weeks)	149,752	69,151	80,601	61,143	11,752	6	0
1913 (52 weeks)	150,540	71,225†	79,315	60,356	11,613	19	0
1914 (53 weeks)	188,040	104,593	83,447	65,817	12,482	11	6
1915 (52 weeks)	202,939	118,788	84,151	69,746	13,007	10	0
1916 (52 weeks)	303,334	197,669	105,665	88,265	16,379	17	0
1917 (52 weeks)	272,199	177,403	94,796	80,374	14,859	14	0
1918 (52 weeks)	255,462	146,504	108,958	90,898	16,889	0	0
1919 (52 weeks)	301,913	170,670	131,243	107,067	20,017	14	6
1920 (53 weeks)	284,194	149,447	134,747	108,684	20,415	0	0
1921 (52 weeks)	258,461	131,167	127,294	99,911	18,949	10	6
1922 (52 weeks)	263,047	143,088	119,959	90,400	19,028	12	6
1923 (52 weeks)	269,822	144,118	125,704	93,701	20,875	16	0
1924 (52 weeks)	337,521	178,990	158,531	121,890	27,109	15	0
1925 (53 weeks)	488,781	339,790	148,991	115,378	25,610	2	6
1926 (52 weeks)	541,916	407,687	134,229	105,560	23,305	6	6
1927 (52 weeks)	1,002,345	854,084	148,261	115,009	25,733	16	0
1928 (52 weeks)	600,678	452,953	147,725	114,731	25,678	17	0
1929 (52 weeks)	550,742	402,853	147,889	116,768	25,903	18	0

* Including some searches made in 1908.

† In addition, there were 91,917 gratuitous searches made for National Insurance Audit purposes.

The 402,853 gratuitous searches during 1929 comprise 61,472 searches made for the purpose of verifying the ages of persons aged 70 and upwards claiming old age (non-contributory) pensions and 204,313 for persons aged 65–69 claiming pensions under the Old Age Contributory Pensions Act, 1925; 69,360 for verification purposes in connexion with claims to widows' and orphans' pensions under the Widows', Orphans', etc., Act, 1925; 28,780 to assist dependents of men of H.M. Forces to produce evidence of marriage and of the births of children in connexion with claims to naval and military pensions, separation allowances, etc.,

and to verify the ages of certain classes of youths and men in connexion with service in the Army, Navy, and Air Force; 26,249 for verification of age, &c., in connexion with National Health and Unemployment Insurance; and 12,679 for other public purposes.

Offences against the Registration Acts.—In 1929 fifteen persons, on prosecution by order of the Registrar-General, were convicted of offences in connexion with registration. The offences for which convictions were obtained were as under :—

(a)	For failing to register a birth	1
(b)	For failing to re-register a birth under the Legitimacy Act	4
(c)	Giving false information when registering a birth or death	7
(d)	Giving false information for the purpose of procuring marriage	3

In addition to the above cases proceedings were taken and convictions obtained by the Director of Public Prosecutions in cases reported through the Registrar-General, the offences being those of false registration and making false declarations when giving notice of marriage.

RE-REGISTRATION OF BIRTHS UNDER THE LEGITIMACY ACT, 1926.

Under the Legitimacy Act, 1926, an illegitimate child of parents who married after the birth of the child was, subject to certain conditions, legitimated ; and the Act contained incidental provision to enable the births of such children to be re-registered. During the year 1929, authority was issued for the re-registration of the births of 4,046 children, being 837 less than the preceding year. It would appear that the normal figure to be expected in future years will be approximately 4,000, though it is still difficult to speak with any certainty. A large number of applications are not made shortly after the marriage of the parents but are postponed until the children's birth certificates are required on entering or leaving school or attaining the age of 21.

The number of authorities issued during each quarter is as follows :—

	1927.	1928.	1929.
March quarter	1,265	1,401	1,075
June quarter	1,256	1,170	1,105
September quarter ..	1,381	1,242	933
December quarter ..	1,593	1,070	933
Totals	5,495	4,883	4,046

ADOPTION OF CHILDREN UNDER THE ADOPTION OF CHILDREN ACT, 1926.

The Adoption of Children Act, 1926, provided for the legal adoption of children by Order of the Court, and established a system of registration of such adoptions in an Adoption Register to be kept by the Registrar-General. The number of children whose adoption was registered during 1929, is 3,307, the following table furnishing an analysis of the Adoption Orders made by reference to the several classes of Courts and the quarterly distribution of the total figure.

Table XCVII.

Year.	Number of Adoption Orders dealt with.				Corresponding number of children, i.e., Entries made in Adopted Children Register.					
	Total.	High Court.	County Court.	Court of Summary Jurisdiction.	Year's total.	March Quarter.	June Quarter.	September Quarter.	December Quarter.
1927	2,943	133	184	2,626	2,967	329	990	774	874
1928	3,278	124	236	2,918	3,303	851	844	705	903
1929	3,294	72	224	2,998	3,307	722	787	857	941

PARLIAMENTARY AND LOCAL GOVERNMENT ELECTORS.

The returns of Parliamentary and Local Government Electors published in Tables T and U summarise the first Register of Electors to be compiled under the Representation of the People (Equal Franchise) Act of 1928 and are in respect of the qualifying period of three months ending on the 1st December, 1928.

The particulars have been taken from statements furnished to the Registrar-General by the Registration Officers of the several areas, or in the case of a University forming the whole or part of a University constituency, by the Chancellor, Registrar or other officer dealing with Parliamentary registration.

Registration Officers were instructed that the return of Parliamentary Electors should be the net total of individual Parliamentary Electors in each constituency, all duplicate entries being omitted from the count. In the case of Local Government Electors the number of names on the register was to be given. The instructions further directed that the names of " out voters " (that is, persons whose names appear twice in the Register, by reason of a claim under Rule 24 of the First Schedule to the 1918 Act) should be counted once only in respect of that qualification.

Table T refers to Parliamentary electors, and shows for each Parliamentary constituency in England and Wales, including the University constituencies, the number of males and females on the Register, and also the numbers registered in respect of business premises qualifications and the numbers on the absent voters list.

Table U refers to Local Government electors, and shows the numbers of each sex registered in respect of every sanitary area, *i.e.*, county borough, metropolitan borough, municipal borough, urban district and rural district in England and Wales.

Table XCVIII—England and Wales.— Parliamentary and Local Government Electors.

Register.	Parliamentary Register (including University Constituencies).					Local Government Register.		
	Persons.	Males.	Females.	Men registered for business premises qualification (included in Cols. b and c).	Persons on Absent Voters List (included in Cols. b–d).	Persons.	Males.	Females.
a	b	c	d	e	f	g	h	k
1918 (Autumn)	17,222,983	10,281,054	6,941,929	159,013	3,362,028	13,930,130	6,998,665	6,931,465
1919 ,,	17,465,638	10,234,887	7,230,751	205,461	1,157,061	14,361,123	7,176,019	7,185,104
1920 ,,	17,584,552	10,176,750	7,407,802	203,471	254,866	14,712,453	7,364,912	7,347,541
1921 ,,	17,795,784	10,237,344	7,558,440	194,737	185,227	15,019,348	7,527,861	7,491,487
1922 ,,	18,001,692	10,312,248	7,689,444	199,904	162,901	15,322,625	7,700,108	7,622,517
1923 ,,	18,388,833	10,498,179	7,890,654	208,694	151,953	15,691,962	7,873,461	7,818,501
1924 ,,	18,806,842	10,719,922	8,086,920	211,257	165,564	16,015,033	8,007,384	8,007,649
1925 ,,	19,167,275	10,897,545	8,269,730	217,509	167,406	16,345,290	8,157,607	8,187,683
1926 ,,	19,346,954	10,982,128	8,364,826	206,199	161,460	16,574,549	8,284,181	8,290,368
1927 ,,	19,585,972	11,094,031	8,491,941	205,538	155,436	16,865,666	8,444,718	8,420,948
1928 ,,	19,866,649	11,226,396	8,640,253	205,793	154,432	17,179,487	8,608,017	8,571,470
1929 (Spring)	25,095,793	11,866,794	13,228,999	209,660	174,731	18,620,395	8,825,225	9,795,170

The figures for the whole country are summarised in the adjoining table and are shown in conjunction with the figures of previous Registers made since the passing of the 1918 Act.

It should be observed that the 1929 Register which came into force from the 1st May, 1929, is in respect of a qualifying period ending on 1st Dec., 1928, and that the interval between the 1928 and 1929 Registers is one of six months only instead of the full year by which previous records are separated.

The achievement of the object of the 1928 Act, which was primarily to place women on the same footing as men in regard to franchise rights, is reflected by the increase of the female Parliamentary electorate by over $4\frac{1}{2}$ millions and the Local Government electorate by nearly $1\frac{1}{4}$ millions, in consequence of which women now outnumber men in the ratio of 111 women to 100 men on each of the two electorates. The corresponding male increase, though only a fraction of that registered for women, is nevertheless abnormal, the increment of over 640,000 in the Parliamentary voters in six months being more than the total

increment in the preceding four years ; this addition cannot be explained by the new Act which left the male franchise unaltered apart from a trifling addition—approximately 3,000—in respect of men registered in respect of their wives' occupation of business premises, and must be mainly ascribed to the special procedure, adopted for the first time in connexion with the 1929 register, of the universal service of a compulsory form of return which has disclosed and made good omissions from the registers on the pre-1928 Act franchise.

Including a certain amount of plural representation in the case of those persons registered in more than one constituency by reason of their possessing the necessary residence or business qualification, or being entitled to be registered in respect of a University constituency, the total Parliamentary electorate of 25,095,793 represents 63·4 per cent. of the estimated total population, or 62·6 per cent. of the male and 64·1 per cent. of the female population ; in the case of the rather more restricted Local Government franchise, the numbers are somewhat less and the proportions correspondingly lower, the total electorate being 47·0 per cent. of the whole population, or 46·5 per cent., and 47·5 per cent. in the case of males and females separately.

Of the total of the Parliamentary Registers, the bulk, viz., 25,023,089, represents the aggregate voting strength in the 509 geographical constituencies into which England and Wales is divided, the balance of 72,704 representing the five University constituencies. Eleven of the Boroughs, and three University constituencies, however, each return two members, so that the total representation in Parliament is by 528 members, 520 in respect of the geographical divisions, with an average electorate of 48,121 per member and eight in respect of the Universities, with an average electorate of 9,088.

MISCELLANEOUS.

Other tables appearing in Part II. of the Statistical Review which have not formed the subject of special comment in the foregoing pages are as follows :—

> Table R, showing the balance inward or outward of passenger movement into and out of the United Kingdom for each of the years from 1910–1929.
>
> Table W, showing the Area, Population, Births and Deaths in British Islands other than Great Britain and Ireland from 1902–1929.
>
> Table X, showing the Population, Births, Deaths, Infant Mortality, Marriages and corresponding rates for the year 1929 in the several portions of the British Dominions :—
>> The Commonwealth of Australia.
>> Canada.
>> New Zealand.
>> South Africa.

Table Y, showing the 1921 Census Populations, and the intercensal rate of increase or decrease of the several Dominions, Colonies and Protectorates (including mandated territories) in the British Empire.

Table Z, showing the latest Census Populations and intercensal rates of increase or decrease in various Foreign Countries.

Table AA, showing the changes which have taken place in the boundaries of Administrative and Poor Law Areas in England and Wales during 1929.

Table BB, showing the changes which have taken place in the boundaries of Administrative Areas in England and Wales during 1929, with enumerated population by sex and age (1921) of the transferred areas.

METEOROLOGICAL REMARKS.

The Weather during the Year 1929.

The weather of the year 1929 provided many features of unusual interest, in particular its sunniness, the remarkable fluctuations in temperature and rainfall and the violent gales of December. The abnormal wetness of the last three months and the dryness of the preceding months (at many places more than half the year's rainfall fell during the last three months), the intense cold of February and the unusual warmth of September, the quiet, dry, conditions at the beginning of the year and the wet and stormy weather at its close when in a violent gale a wind speed in a gust of 111 mi/hr was recorded at Scilly on December 6th, provided violent contrasts seldom exhibited in any previous year. Nevertheless when annual averages of temperature and rainfall are examined it is found that in most districts they approximated closely to the normal. Mean temperatures for the year were nearly everywhere within $0 \cdot 5°$ F. of the normal, while the general precipitation was exactly normal over England and Wales as a whole. Over more than half the country annual totals were within 10 per cent. of the normal. Most of the districts which had an excess were situated in the west; there was more than 120 per cent. over much of the Devon-Cornwall peninsula, in South Wales and in Snowdonia. On the other hand less than 80 per cent. fell in Lincolnshire. March with 13 per cent. of the normal rainfall and November with 232 per cent. were the driest March and wettest November over the country as a whole for over a half a century.

Conspicuous incidents in the annual course of temperatures were the intense cold in February and the abnormal warmth of September. The cold in February was most intense during the period 11th to 17th and the severest experienced generally since February, 1895. Temperatures remained continuously below

freezing point from the 11th to the 17th over large areas of Great Britain and in some eastern and south-eastern districts, e.g., at Manston (near Margate), from the 11th to the 20th. Screen minima below 10° F. were fairly numerous from the 12th to the 16th and in one or two places readings below zero were recorded, e.g., −1° F. at Ross-on-Wye and Usk on the 14th and at Houghall (Durham) on the 17th. The most noteworthy spell of hot weather occurred during the last few days of August and the first half of September ; 90° F. was recorded in London (Camden Square) and at Margate on August 31st and at Newport (I. of Wight) on September 5th. In London (Camden Square) the temperature rose to · 75° F. or over on five consecutive days from August 23rd to 27th and again on 18 consecutive days from August 30th to September 16th. Notably high temperatures were also recorded in a brief spell of hot weather from about July 15th to 20th, when the temperature in most parts of the country rose to 80° F. and over. In the south-east the highest temperatures in July occurred on the 20th, exceeding 85° F. on that date in most places and reaching 89° F. at Camden Square, London, and at Wisley and Newport (I. of Wight).

The sunny character of the year was revealed in the annual aggregates of bright sunshine which in almost all districts exceeded the normal.

January was, on the whole, quiet, very cold, especially from the 5th to the 9th, and mainly dry with a conspicuous paucity of westerly and south-westerly winds. The month was the first really cold January since 1917 and the coldest January in London since 1895. Precipitation occurred frequently in the form of snow, particularly during the period 5th–9th and about the 16th ; at Durham on the 16th snow lay to a depth of from three to four inches. Sunshine aggregates were in general above the normal in the west and south-west and below the normal elsewhere. The outstanding feature of the weather of *February* was the intense cold which prevailed in England from the 11th to the 17th. Over the eastern half of England the mean temperature for the month was below 32° F. and decidedly below the normal. Monthly totals of precipitation were decidedly deficient, except in the extreme south-west of England where there was a slight excess. Snow fell frequently during the period 10th–18th and 25th–28th. A slight to moderate excess of bright sunshine was recorded locally, chiefly on or near the south-east coast of England, but in general, aggregates were deficient. *March* was, on the whole, quiet, sunny and abnormally dry, with, however, much mist or fog at night and in the early morning. There were some very warm days and frequent cold nights and ground frosts, a note-worthy feature of the weather of the month being the unusually large diurnal range of temperature. At almost all stations the mean temperature for the month exceeded the normal. Monthly totals of precipitation were everywhere less than half the normal

and at several stations all previous records for dryness were eclipsed. At a number of stations in or near London, March 1929 was rainless.

A decided deficiency of precipitation, a preponderance of northerly to easterly winds and an absence of warmth and frequently severe ground frosts were the main features of the weather of *April*. Mean temperatures for the month were below the normal. Monthly totals of precipitation were below the normal except in a few eastern districts of England. Sunshine aggregates for the month were in general below the normal except in the west. The first half of *May* was mainly cool and unsettled, with heavy rain from the 4th to the 8th and occasional thunderstorms but with considerable sunny periods. After the 15th most days were rainless over the great part of the country, with much sunshine and warm weather from the 22nd to the 28th, the temperature reaching or exceeding 80° F. locally in the south-east on the 23rd. Thunderstorms, accompanied locally by heavy rain and hail occurred over wide areas on the 24th, 26th and 27th. The mean temperature for the month was above the normal in the northern districts and about normal in the southern districts. Monthly totals of precipitation were, in general, below the normal in the eastern, central and parts of the north-western districts. In the south and south-west of England and the greater part of Wales there was a considerable excess. Monthly totals of bright sunshine were in general above the normal.

Notwithstanding an excess of sunshine in most districts, notably in the west, *June* was, on the whole, a cool month with fairly frequent ground frost. Although unsettled weather during the first two weeks brought welcome rain, the second half of the month was relatively dry in most districts. Except at a few coastal stations, monthly mean temperatures were everywhere below the normal. On the 19th the temperatures attained or exceeded 80° F. locally in the east and south-east. Monthly totals of precipitation exceeded the normal in parts of Wales and in Devon and Cornwall, but in almost all other districts in England there was a decided deficiency which was most pronounced in the east and south-east.

July was dry with much sunshine in the south and east. High temperatures occurred widely about the middle of the month but the hot spell did not last long enough to impress its character in any marked degree upon the whole month and monthly mean temperatures were generally within 1° F. of the normal. In spite of some very heavy local falls of rain, mostly associated with thunderstorms, rainfall was generally decidedly below the normal except over parts of northern and north-western England and northern Wales and East Anglia. Sunshine aggregates exceeded the normal in most districts. *August* was mainly fair and dry over most of England and Wales. In most districts the mean temperature was within

a degree of the normal. Sunshine aggregates exceeded the normal in the south-east of England but elsewhere there was in general a deficiency. In the east and south-east maximum temperatures of 80° F. and over were recorded locally on the 27th and again on the 31st when 90° F. was recorded in London and at Margate. Apart from a well-defined excess of rainfall in the north-west and extreme north of England, rainfall totals in England and Wales were almost everywhere below the normal. *September* was fine and unusually warm and dry. During the first half of the month, temperatures in the neighbourhood of 80° F. were frequently recorded in parts of the southern Midlands and south-east of England. Even towards the end of the month 70° F. was frequently exceeded. In some places the month was the warmest September experienced in over 50 years. In all districts of England and Wales monthly rainfall totals were below the normal, the drought being most intense in the Midlands and in the south-east, where some places had no measurable rain until the 28th, 29th or 30th. At Richmond (Kew Observatory) the rainfall for the month, 4 mm., was the smallest September total since at least 1866 and with the dry spell during the latter part of August the drought had lasted there for the exceptionally long period of 37 days. At Ross-on-Wye the month was the driest September since 1865. Sunshine aggregates were considerably above the normal.

October was unsettled, windy and wet. Mean temperatures were generally within 1° F. of the normal. A very mild spell when the temperature approached or exceeded 65° F. occurred about the middle of the month. There were considerable bright periods and monthly sunshine aggregates exceeded the normal. *November* was mild and unprecedently wet with frequent strong winds or gales. There were, however, considerable bright intervals, sunshine aggregates for the month exceeding the normal except in the north-west. *December* was mild, abnormally wet and stormy, particularly in the south and west where wind velocities in gusts of over 80 mi/hr were frequently recorded in exposed positions during a succession of severe gales from the 5th to the 12th and again on the 20th–21st, 24th–25th and 28th–29th. Cold weather with severe ground frost occurred during the period 17th to the 22nd, during the last few days of which snow fell in several districts. Although the weather was very unsettled, there were considerable bright intervals and in all districts there was a pronounced excess of sunshine.